

JPRS 77804

10 April 1981

# USSR Report

AGRICULTURE

No. 1272



FOREIGN BROADCAST INFORMATION SERVICE

#### NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [ ] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

#### PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

10 April 1981

## USSR REPORT

## AGRICULTURE

No. 1272

## CONTENTS

## LIVESTOCK FEED PROCUREMENT

- Measures for Increasing Fodder Production in Belorussia  
(F. Mirochitskiy; SOVETSKAYA BELORUSSIYA, 23 Jan 81)..... 1

## LIVESTOCK

- Livestock Production Totals Cited for Animal-Husbandry Complexes  
(TRUD, 18 Feb 81)..... 5

## REGIONAL DEVELOPMENT

- Further Agricultural Achievements in Belorussia Outlined  
(G. G. Kovalenko; SEL'SKOYE KHOZYAYSTVO BELORUSSII,  
Jan 81)..... 9

## AGRO-ECONOMICS AND ORGANIZATION

- Lithuania Stresses Importance of Private Sector in Agriculture  
(Kh. Markov; SOVETSKAYA LITVA, 19 Feb 81)..... 15

- Improving the Efficiency of Milk Production Complexes  
(I. V. Ushakov; FINANSY SSSR, Jan 81)..... 18

- Discussion of Private Plot Livestock Operations  
(SEL'SKAYA ZHIZN', 10, 17 Mar 81; SEL'SKAYA GAZETA,  
13 Mar 81)..... 31

Feed Needs of Livestock Breeders, by A. Denisov  
Advantages of Cattle Raising Described  
Response to Complaint of Calf Raiser

- Increased Production From Private Plots Held Essential  
(EKONOMIKA SEL'SKOGO KHOZYAYSTVA, Feb 81)..... 34

Readers Note Problems Connected With Private Plots (SEL'SKAYA GAZETA, 18, 20 Feb 81).....	41
--	----

Review of Letters, by Marat Khonyak  
No Profit in Calf Raising, by I. Vashkevich

Shortcomings of Grain Procurement Operations Described (V. Aniskin, L. Kropp; SEL'SKAYA ZHIZN', 19 Feb 81).....	44
--	----

#### AGRICULTURAL MACHINERY AND EQUIPMENT

Officials Discuss Plans for Introducing Modern Machinery (V. Bykadorov; SEL'SKAYA ZHIZN', 4 Feb 81).....	47
---	----

New Industrial Technology Subject of All-Union Conference (N. Marfin; SEL'SKAYA ZHIZN', 18 Feb 81).....	49
--	----

#### TILLING AND CROPPING TECHNOLOGY

Importance of Fertilizer for Increased Crop Yield Stressed (V. Pannikov, V. Mineyev; SEL'SKAYA ZHIZN', 4 Feb 81).....	53
--	----

## LIVESTOCK FEED PROCUREMENT

### MEASURES FOR INCREASING FODDER PRODUCTION IN BELORUSSIA

Minsk SOVETSKAYA BELORUSSIYA in Russian 23 Jan 81 p 2

[Article by F. Mirochitskiy, 1st deputy minister of Agriculture for the Belorussian SSR: "Feed Means Milk and Meat"]

[Text] Animal husbandry in our republic produces one half of the gross and three quarters of the commodity agricultural production. The most striking achievements in this important branch were realized during the past 15 years, that is, following the fine decisions handed down during the March (1965) Plenum of the CC CPSU. For example, milk production increased by a factor of 1.9, livestock and poultry -- 2.7 and eggs -- by a factor of 1.6. At the present time, more than 630 kilograms of milk, approximately 90 kilograms of meat and more than 300 eggs are being produced per capita in the republic on an annual basis.

However, the level achieved and the rates for the development of animal husbandry are still not in keeping with the rapid increasing requirements of the population. This is especially noticeable if we compare the modern level of development of animal husbandry against those tasks which must be carried out during the next few years. In the CC CPSU plan for the 26th party congress, it is stated that our republic must ensure an average annual production of 950,000 to 1 million tons of meat (in dressed weight) and milk -- 6.5 - 6.7 million tons.

A great amount of effort must be expended if these plans are to be realized. One very acute problem is that of creating a strong feed base for animal husbandry. Definite successes have already been achieved in this regard. During the 1965-1980 period, feed consumption in public animal husbandry increased from 7.9 million tons of feed units to 15.8 million tons. Moreover, the amount of digestible protein in a feed unit increased from 81 to 96 grams. Nevertheless, such a level of feed consumption did not make it possible to realize fully the genetic potential of the cattle strains being bred in the republic.

What are the unresolved problems here? Against an overall twofold increase in the amount of feed consumed in animal husbandry, the amount of internally produced feed increased by a factor of only 1.8 and purchased feed -- by a factor of 4.5. The proportion of the latter with regard to overall feed consumption increased from eight percent in 1965 to 18 percent in 1980.

During recent five-year periods, a great amount of attention was given to increasing the production of concentrated feeds, with very little concern being evidenced for



coarse and succulent feeds. As a result, the consumption of the former increased by a factor of 3.7 and the latter -- by a factor of only 1.7. Sufficiently energetic measures were not undertaken to improve the use of the feed, raise its nutritional value and reduce losses during storage. This led to a great over-expenditure of feed per unit of output. During the past 5 years alone, feed consumption per quintal of milk increased by eight percent, beef -- by 15 and pork -- by seven percent. One cannot fail to note that the use of feed, in accordance with the most important trends for the components of output, has not been ideal. The increase obtained annually in forage supplies was spent as a rule for maintaining life in developing animals. The intensity of feeding was raised during these years by only 14 percent, or an increase of from 23.4 to 26.7 quintals of feed units per standard head of long-horned cattle.

As a result of these and other factors, the over-expenditure of feed for products actually produced in animal husbandry reaches 2 million tons of feed units annually. And this occurs at a time when, based upon the number of livestock available and the possible productivity to be realized from them, there is a deficit of approximately 2.8-3 million tons of feed units. In view of the low feeding intensity, the productivity of the animals is falling rather than increasing. At the same time, the indicators for labor productivity, output production costs and the profitability of animal husbandry on the whole are deteriorating.

The creation of a strong feed base for animal husbandry, as emphasized in the CC CPSU plan for the 26th party congress, must proceed in two directions. On the one hand, the amount of feed will have to be increased and improvements realized in its structure and quality and, on the other -- improvements must be realized in the storage and use of feed and feed expenditures per unit of output must be reduced.

Taking into account these requirements, the overall feed requirement for 1985, for the planned animal husbandry output, will amount to 24 million tons of feed units, with 18.4 million tons of this amount being in the public sector. The increase in feed during the five-year period must amount to 2.6 million tons of feed units. Moreover, the principal thrust will be that of increasing the coarse and succulent feeds, which must increase by 3.3 and 3.6 million tons respectively. In addition, the plans call for a sharp reduction in feed consumption per units of output, as a result of improved quality and nutritional value.

Just as in the past, in solving the problem concerned with increasing the amount of feed available, priority importance will be attached to field feed production, which accounts for two thirds of all internally produced forage. One of the principal actions to be taken is that of achieving a sharp increase in the cropping power of the forage crops and in the yield of digestible protein. This task cannot be solved if improvements are not realized in the structure of the area under crops. With regard to the silage crop group, their sowings in a mixture with pulse crops must be expanded. The proportion of alfalfa and clovers in the perennial grass group must be raised from 25 to 75 percent; alfalfa, peas and vetch in annual crop sowings -- from 23 to 64 percent; plants of the Cruciferae family in the group of intermediate and secondary sowings -- from 10 to 40 percent.

The areas used for the sowing of pulse crops must be expanded by almost twofold. Subsequently, the pulse crop plantings will be expanded to a point where they will

ensure the required structure for internally produced grain forage -- such that each feed unit will contain 105-107 grams of digestible protein.

One of the main sources and reserves for increasing the production of full value and cheaper feeds in the republic is that of the haying and pasture land, which occupy approximately 36 percent of all agricultural land. Through the implementation of large scale measures aimed at improving and making correct use of the meadows, opportunities will become available for raising their productivity by at least twofold and increasing the yield of feed units to 30 quintals per hectare. This will make it possible by means of meadow lands to cover 45 percent of the grassy feed requirements of all categories of farms in the republic.

Within the overall system of measures for raising the effectiveness of field and meadow feed production, one efficient means is that of organizing seed production for forage crops, especially pulse crops: lupine, peas, vetch, clover and alfalfa and also such cereal grasses as cock's foot, awnless brome grass, fescue and reedgrass. In order to supply the kolkhozes and sovkhoses more rapidly with forage crop seed in the required assortment, a majority of the republic's farms will have to engage in seed production for grasses and other forage crops during the next few years. However, it is noted that the principal bulk of the seed for grasses and other forage crops, especially the highly intensive types, will be produced at the Belsortsemprom, Belsemtravob'yedineniye and Belsortsemovoshch specialized farms.

During the new five-year period, the plans call for a considerable increase in mineral and organic fertilizer applications to forage crops and for an expansion in the volumes of liming work. The use of mineral fertilizers must be increased by 28 percent prior to 1985. Of the overall quantity of mineral fertilizers planned for forage crops and agricultural land, approximately 38 percent will be applied annually to haying and pasture lands. Greater use will be made of chemical agents for protecting plants.

Measures which are to be implemented for the purpose of raising the efficiency of field and meadow feed production will make it possible to satisfy fully the requirements of animal husbandry for both coarse and succulent feed and they will also improve considerably the availability of digestible protein in the rations.

In the CC CPSU plan for the 26th party congress, mention is made of measures being adopted for ensuring that feed is made available for the livestock on the private plots of citizens. Approximately 5.5 million tons of feed units are required for this purpose. The raising of potatoes, perennial grasses, root crops and other crops on the private plots will provide 1.5 million tons of feed units and by issuing feed in the form of wages and making pastures available -- 3.5 million tons. The plans for the 1981-1985 period also call for mixed feed to be made available to the population from state resources.

The task of reducing feed losses during procurement and storage should be discussed separately. The preparation of hay at the kolkhozes and sovkhoses must be carried out using mainly the method of forced ventilation and pressing, with mandatory preliminary crushing, especially leguminous grasses. The plans call for all of the hay to be stored in special storehouses.

Prior to the end of the Eleventh Five-Year Plan, the production of dehydrated feed is to be raised to 660,000 tons, with 400,000 tons of this amount being grass meal. The production of "green concentrates" for sale to the mixed feed industry will be carried out mainly at specialized farms. Towards this end, the plans call for the republic to have 75-80 specialized farms, each producing no less than 1,700-2,000 tons of grass meal annually. On these farms, the structure of the areas under crops will be examined with an eye towards increasing the sowing of grasses, especially leguminous grasses, expanding the irrigated areas and carrying out other measures.

The production of milk and meat must be increased considerably by raising the nutritional value of the rations during the stabling period. The use of feed in the form of full-ration mixtures will be increased to 6.2 million tons by 1985. For the purpose of improving the storage and raising the nutritional value of straw, the plans call for 2.8 million tons to be treated with ammonia. More than 1 million tons will be ensiled and approximately 2 million tons -- reprocessed and used in the form of feed mixtures.

An important problem is that of making proper use of internally produced grain forage. In order to increase the return from feeding it to the livestock, it has been proposed that all of the grain be processed into mixed feed and grain mixtures or used in full ration mixtures. Just as in the past, the development of the production of mixed feeds will be carried out in two directions: by intensifying the capabilities of the state mixed feed industry and by organizing the production of mixed feeds at kolkhozes and sovkhoses, based upon internally produced grain and industrial additives.

The introduction of modern feed procurement technologies is possible based upon the creation of an appropriate logistical base at the kolkhozes and sovkhoses and ensuring that they are supplied with feed procurement equipment. In order to carry out the tasks concerned with the timely harvesting of forage crops and converting the feed procurement technology over to a modern industrial basis, the farms will be supplied with a large quantity of different types of equipment and kolkhoz-sovkhoz and interenterprise mixed feed enterprises will be built having an annual capability of 1 million tons. The plans also call for the erection of 1,800 feed preparation shops and five plants for meat and bone meal. Many storehouses will be built for hay, haylage, silage and so forth.

From an organizational standpoint, the plans call for feed production to be established as an independent specialized branch. Its principal element must be permanent complex fodder production detachments, consisting of technological teams which are organized for the purpose of raising and procuring all types of feed, processing the raw materials and preparing full-ration mixtures. The deputy chairmen of kolkhozes (deputy directors of sovkhoses) or feed production specialists will serve as the direct leaders of the branch and the organizers of production.

There is no denying the fact that a great amount of work still remains to be carried out in order to strengthen the republic's feed base for animal husbandry during the Eleventh Five-Year Plan. But only if this is done will it be possible to achieve further increases in the production of meat, milk, eggs and other types of animal husbandry products and make a notable contribution towards solving the food problem.



## LIVESTOCK

### LIVESTOCK PRODUCTION TOTALS CITED FOR ANIMAL-HUSBANDRY COMPLEXES

Moscow TRUD in Russian 18 Feb 81 p 1

[USSR Deputy Minister of Agriculture L. Kuznetsov comments: "More Animal Husbandry Production!"]

[Text] For the seventh year in a row, collectives of the largest animal-husbandry complexes are concluding an agreement on socialist competition for the production of beef and pork. The results of work for 1980 have been totaled. As last year, the best results were obtained by the animal-husbandry complexes of Mir in Brestskaya Oblast and Il'inogorskiy in Gor'kovskaya Oblast.

The conversion of animal husbandry to an industrial basis, being carried out in conformity with the decisions of the party and the government, achieved wide scope during the years of the 10th Five-Year Plan. This was abetted by the creation of a solid material-technical base for the building and operation of complexes. As of today 3,033 animal-husbandry complexes are in operation, including 488 for the production of pork, 300 for beef, 2,120 for milk and 125 for the rearing of young non-bred cows.

During the years of the 10th Five-Year Plan, the country's animal-husbandry complexes sold 7.2 million tons of pork and beef, 9.9 million tons of milk and reared 577,000 young cows. A total of 2.379 million rubles of profit was realized from the sale of these products.

At pig-growing complexes, average daily weight increases of animals are one and a half times greater and expenditures of feed per product unit almost one half of animal-husbandry farms of sovkhozes that have not converted to industrial flow technology. The time of rearing one head has also been reduced by one third.

Practice has shown that at the large pig-growing complexes, manual labor and nonproductive outlays have been almost excluded from the production cycle, and this produces a high economic effect.

A total of 63.2 million rubles was spent on the construction of two complexes of Il'inogorskiy Sovkhoz-Combine, each for 108,000 pigs. This is not a small sum. But the enterprise already has completely paid for itself in 4.5 years and now provides the state with pure profit. In 1979 the Il'inogorskiy workers produced 26,200 tons of pork; the profit from their sale amounted to 29.3 million rubles.

Table. Commitments of Participants of Agreement for 1981

Animal-husbandry complexes	Meat sales to state in live weight (in tons)	Avg daily weight gain during fattening (in grams)	Cost per quintal of weight gain (in rubles)	Labor outlays per quintal of weight gain (man-hours)	Feed outlay per quintal of weight gain (quintal of feed units).
For Pork Production					
Il'inogorskiy No 1	14,050	630	89.50	2.40	4.20
Il'inogorskiy No 2	13,550	637	86.50	2.30	4.20
Kuznetsovskiy	12,400	610	90.00	2.40	4.75
Kalityanskiy	13,400	605	96.00	2.40	4.80
Gubkinskiy	11,600	610	98.00	3.40	4.90
Vostochnyy	14,800	637	95.00	2.40	4.50
Luzinskiy	12,600	660	85.00	2.50	4.50
Industrial'nyy	13,100	640	89.00	2.60	4.30
Krasnogorskiy (two sections)	25,600	610	98.00	3.50	4.50
Chistogorskiy	12,250	610	97.00	2.89	4.75
Gornoural'skiy	13,500	620	105.61	3.40	4.40
Permskiy	14,700	637	106.00	2.40	4.60
Imeni 60-Letiye BSSR	14,000	670	90.00	2.45	4.20
Alekseyevskiy	13,100	637	108.45	3.60	4.80
For Beef Production					
Mir	4,600	1,075	100.00	2.40	5.40
Valuyskiy	4,450	1,000	105.00	4.20	5.90
Voronovo	4,425	970	115.00	3.60	5.80
Pashskiy No 1	4,480	977	124.00	2.20	7.00
Pashskiy No 2	4,480	946	127.00	2.20	7.00
Yumatovskiy	4,700	1,020	110.00	2.50	5.70
Donskoy	4,121	919	129.12	3.40	6.70
Dzhetyskiy	4,280	900	130.44	3.90	6.70
Imeni 50-Letiye VLKSM	4,100	850	140.00	5.30	6.00
Druzhba	4,800	1,035	120.00	2.50	6.00
Imeni XXV S"yezd KPSS	5,800	950	122.00	3.30	5.50
Bratskaya Fattening Area	10,625	900	130.13	1.40	9.20
Proletarskaya Fattening Area	10,700	900	139.00	1.50	9.30
Veselovskaya Fattening Area	10,550	890	137.80	1.90	9.00
Armavirskaya Fattening Area	8,500	750	110.00	1.15	9.30

High efficiency of production and quick recovery of capital investment have been achieved at all the large pig-growing enterprises.

At the beef-production complexes, average daily weight increases of young stock are also higher than at sovkhozes; the average live weight of one head sold to the state is one quintal greater, while feed outlay per product unit is almost half as large.

The biggest gains have been obtained at complexes where calf rearing begins at two weeks of age; in 13 months they are sent to the meat combine. By this time the weight of bull-calves reaches 450 kilograms.

Launching the socialist competition for a worthy celebration of the 26th CPSU Congress, the collectives of the animal-husbandry complex boosted in 1980 the rate of production output. Thirteen complexes, producing pork, fulfilled as a whole by 101.4 percent their socialist commitments for the sale of meat to the state; they sold to the state 183,500 tons of meat; this is 12,900 tons more than in 1979. Average weight gains of animals being fattened grew to 623 grams. Among the pig-growing farms, the best results were obtained by collectives of the complexes Il'inogorskiy, Industrial'nyy and Luzinskiy.

The animal-husbandry workers of the Complex imeni 60-Letiye Belorusskaya SSR worked successfully last year. They sold to the state 600 tons of pork above adopted socialist commitments. The average weight gains of animals being fattened grew to 600 grams, while outlay of feed per quintal of product was reduced to 4.2 quintals of feed units.

Socialist commitments were fulfilled for all indicators by the collectives of the complexes Vostochnyy, Krasnogorskiy. But some enterprises failed to meet their commitments. The complexes Kuznetsovskiy, Gubkinskiy, Kalityanskiy were short 2,600 tons of pork. The Permskiy Complex fulfilled its adopted program for sale of meat to the state, but at the same time production cost increased.

The work results of complexes for beef production attest to the intensive work of the animal-husbandry personnel in the final year of the 10th Five-Year Plan. Eleven enterprises turned for slaughter 127,400 head of young stock of cattle, which is 2,900 head more than in 1979.

The best indicators for production of beef in the socialist competition were at Mir, Valuyskiy, Voronovo and Yumatovskiy complexes. Mir and Yumatovskiy complexes each sold to the state in excess of 4,700 tons of meat; they fulfilled socialist commitments by 102.5 percent. Mir obtained the biggest average daily weight increase for the animals--1.074 grams and the lowest production cost--103 rubles. Valuyskiy Complex successfully fulfilled adopted socialist commitments. It fulfilled the designated program of sale of meat to the state by 110.3 percent and obtained an average daily weight increase of 1,040 grams; production cost of one quintal of product was 106 rubles. Voronovo Complex, compared to 1979, increased sale of meat to the state by 1,200 tons.

At the same time, the collective of Pashskiy No 1, Donskoy and imeni XXV S"yezd KPSS complexes did not fulfill their socialist commitments. The heads of these enterprises should as soon as possible eliminate the defects which restrain the rate of meat production.

On the eve of the 26th party congress, all animal-husbandry workers assume higher commitments so as to mark the first year of the 11th Five-Year Plan with new labor successes.

7697

CSO: 1824

## REGIONAL DEVELOPMENT

### FURTHER AGRICULTURAL ACHIEVEMENTS IN BELORUSSIA OUTLINED

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 1, Jan 81 pp 10-11

[Article by G.G. Kovalenko, deputy chairman of the Council of Ministers of the Belorussian SSR: "Culture of Farming and a Crop"]

[Text] The CC CPSU plan for the 26th party congress provides us with a program of great achievements in behalf of our Soviet people. It provides a summary of that which has already been achieved, it defines new goals and it establishes large tasks associated with economic and socio-cultural construction, tasks which are in keeping with the modern stage in the building of communism.

Improvements in the welfare of the people are an important aspect of the practical work being carried out in the economic sphere. The accelerated development of the agro-industrial complex occupies first place among those problems upon which the standard of living of our Soviet people is dependent, with the principal task being that of providing the country with reliable support in the form of food goods and agricultural raw materials. The plans call for unified planning, proportional and balanced development for the branches of the agro-industrial complex, considerable strengthening of its logistical base, improvements in the economic links between branches, the organization of efficient interaction among them in the intensification of the production of agricultural products and improvements in the preservation, transporting, processing and delivery to the consumer of these products.

The production of food products is considered to be a most important social-state task. The CC CPSU plan for the 26th party congress entitled "Basic Directions for the Economic and Social Development of the USSR for the 1981-1985 Period and for the Period Up To 1990" calls upon our republic to increase its average annual volume of gross agricultural output by 10-12 percent. To raise the average annual production of grain to 7.8-8.1 million tons, potatoes -- 12.5-13.5 million tons, meat (in dressed weight) -- 950,000 to 1 million tons and milk -- 6.5-6.7 million tons. To drain 480,000-520,000 hectares of water-logged and swampy land.

A strong foundation has been established for carrying out this great task. Despite the tremendous difficulties caused by complicated weather conditions, especially during the past 2 years, the republic's agriculture realized further progress in its development during the years of the Tenth Five-Year Plan. The average annual gross output volume at kolkhozes and sovkhoses increased by 16.6 percent compared to the previous five-year plan, grain production -- by 12 percent, meat -- 22 percent, milk - 19 percent and eggs -- by 71 percent.



A program for radically improving land and raising its fertility is being carried out in an active manner. The liming of acid soils, land reclamation and the extensive use of chemical processes have created favorable prerequisites for obtaining high and stable yields for all agricultural crops. Compared to the 1961-1965 period when the average cropping power for grain crops was 8.3 quintals per hectare, by the 1976-1979 period it had increased to 22.6 quintals; the cropping power for potatoes -- 82 and 165 quintals respectively.

Having assigned the task for further intensifying the rates of production for all types of agricultural products, the party defined the methods to be used for carrying it out. Priority importance is being attached to those problems concerned with the extensive introduction of mechanized operations, the use of chemical processes and land reclamation. Improvements in the agrochemical services for agricultural production are becoming a most important element in the complex of measures for the further development of farming.

The Sel'khozkhimiya associations have a good logistical base. They have roughly 9,000 physical tractors, approximately the same number of motor vehicles and many items of towing equipment. Two hundred and thirty four mechanized detachments have been created here. They are carrying out all of the soil liming operations, 80 percent of the peat extraction work for fertilizer purposes, approximately 50 percent of the soil improvement work, 68 percent of the chemical protection work for plants and they are applying 10-12 percent of the mineral and organic fertilizers. The transporting of all mineral fertilizers, liming materials, chemical agents for protecting plants and 50 percent of the peat from its extraction areas is carried out by the transport vehicles of this service. The overall sales volume for services last year amounted to approximately 113 million rubles, or 103 percent of the plan, including for production mechanized operations -- 104 percent, motor transport -- 102 percent and repair operations -- 105 percent.

The transport vehicles of the associations moved 21 million tons of organic fertilizers out onto the kolkhos and sovkhoz fields and applied 10 million tons, 4.2 million tons of compost were prepared and lime was applied to 1.1 million hectares of acid soil. The Gomel'skaya, Grodnenskaya and Minskaya oblast associations are successfully coping with their tasks and socialist obligations.

Taking into account the exceptional importance of the tasks confronting the new service, every attempt must be made to strengthen its logistical base and equip it with new and highly productive equipment. That which has been accomplished in this regard can only be viewed as the beginning of a great amount of work yet to be carried out. Such rayons as Kruglyanskiy, Korelichskiy, Matislavskiy, Zel'venskiy, Dubrovskiy, Rossonskiy, Narovlyanskiy, Oktyabr'skiy, Zhabinkovskiy, Luninetskiy and many others still lack a reliable production base. These rayons lack workshops, technical servicing points, garages and other production buildings and installations and there is a shortage of housing space.

During the new five-year plan, a considerable sum of capital investments is to be allocated for the construction of rail-served storehouses, production bases, housing and remote stations for the use of chemical processes. The plans call for 170 million rubles to be used for equipping the machine-tractor fleet and also for acquiring machines for loading and unloading operations and other technical

equipment. This will make it possible in the future to increase considerably the use of chemical processes in agriculture.

It is hoped that extensive use will be made of self-propelled machines for applying mineral fertilizers. The models for these machines, designed and manufactured in our republic, have already undergone their production testing. According to the findings of a western machine-testing station, the MVU-30 spreader is 8-10 times more productive than the serially produced IRO-4 unit and it is one and a half times larger than an aircraft. The use of wide-section low pressure ribbed tires ensures good cross country capability under extremely difficult field conditions, including during the early spring period. The machine has interchangeable equipment and thus it can be used for applying liquid fertilizers and also for the chemical protection of plants.

The equipping of agriculture with such machines signifies a radical change in the mechanization of mineral fertilizer applications. All of the interested ministries and departments must devote a great amount of attention to this fact.

A principal and specific reserve for increasing the production of farming products is that of raising the fertility of the soil. The task consists of creating optimum soil conditions for obtaining high and stable yields for all agricultural crops. This includes first of all a favorable air-water regime, an optimum reaction of the soil medium, high supplies of humus and readily available nutrients, the prevention of soil erosion, enlargement of the fields, removing boulders and shrubs from them and the carrying out of other soil improvement work.

The results of scientific studies have shown that through the hydraulic engineering reclamation of excessively damp soils, combined with the extensive use of chemical processes and the use of other means for raising yields, it is possible to raise the productivity of such soils to 60 quintals of feed units per hectare. The plans for the current five-year plan call for the construction of new drainage systems on an area of 355,000 hectares and the modernization of existing systems on 145,000 hectares. The plans also call for the regrassing of 127,000 hectares of agricultural land annually.

A most important agrotechnical method for our set of conditions is the liming of acid soils. There are 5 million hectares of such soil, or 55 percent of the agricultural land, in the republic. Attaching exceptionally great importance to this agricultural method, the kolkhozes and sovkhoses are annually increasing the volumes of their liming operations. Compared to 1954 when only 17,000 hectares were limed, in 1979 -- 1.3 million hectares.

Accordingly, increases took place in the volumes of lime fertilizers applied. They increased by a factor of almost 22 during the past 15 years. At the present time, the Vitebsk Dolomit Production Association is supplying the republic's agriculture with approximately 5 million tons of standard dolomitic meal annually and thus almost completely satisfying the requirements for this type of fertilizer.

At the same time, the plans call for the construction of storehouses for the acceptance and storage of 351,000 tons of pulverized liming materials. By the end of the Eleventh Five-Year Plan, all lime fertilizers will be stored in storehouse

facilities and this will make it possible to convert over completely to applying dolomitic meal using the flow line-industrial technology: rail-served storehouse - ARUP-8 specialized motor vehicle - RUP-8 tractor spreader. This technology is presently being employed for liming approximately 500,000 hectares of land annually.

A great amount of attention must be given to those problems concerned with the production and use of organic fertilizers. One means for solving this important problem -- the extensive introduction of livestock maintenance on deep litter that is changed periodically. This technology has already been introduced into operations at the Onnezhitskiy Kolkhoz in Pinskiy Rayon, the Pobeda Kolkhoz in Baranovichskiy Rayon and on many other farms throughout the republic. It has fully justified its worth.

The construction of large-scale animal husbandry complexes on a non-litter livestock maintenance basis and the absence of the required technologies for utilizing run-off have created a number of difficulties in the storage and use of organic fertilizers. In addition, a shortage of specialized machines and mechanisms has resulted in considerable losses in farmyard manure and in environmental pollution. A requirement exists for developing an effective system for manure removal which would promote constant increases in production and the complete utilization of liquid manure. It is here that the scientists, engineers and designers must do their part.

Animal husbandry is a leading branch of agriculture in Belorussia. It furnishes approximately 80 percent of the overall volume of commodity production. This is why the creation of a strong feed base is becoming one of the principal tasks of agricultural production. The amount of fertilizer being applied to fodder lands is constantly increasing. However, on improved haying lands and cultivated pastures the deficit in nitrogen is 22 kilograms and phosphorus -- 7 kilograms. More than 65 percent of a perennial grass crop is formed on the basis of soil reserves and this results not only in low yields but also in poor quality feed, especially with regard to the content of digestible protein and phosphorus. This situation requires that greater attention be given in the future to those problems concerned with raising the fertility of fodder lands.

Constant improvements are required in the effectiveness of mineral fertilizers. A great deal has been accomplished in this regard. Compared to the 1961-1965 period, when the return realized from 1 kilogram of nutrients applied with mineral fertilizers amounted to slightly more than 3 kilograms of product, expressed in feed units, the figure for recent years has increased -- 5.9 kilograms. The return from 1 kilogram of mineral fertilizer, in the form of grain, has increased from 3.9 to 5 kilograms. An increase has also been realized in the return from each ton of organic fertilizer -- from 19.5 to 24.5 kilograms of feed units. On the average for the 1976-1979 period, the return from one kilogram of mineral fertilizer amounted to more than 6 kilograms of grain for each of 10' rayons and from 5.4 to 6.0 kilograms for each of 31 rayons.

The level of return from fertilizers is viewed as a most important indicator of scientific-production activity in farming. The practice of determining it for each kolkhoz, sovkhoz, rayon and oblast has become firmly entrenched throughout the republic. The conditions for a competition have been approved. The winners of the socialist competition for the highest indicators in the use of mineral and organic fertilizers, among the oblasts, rayons and farms, are awarded challenge red banners



of the Central Committee of the Communist Party of Belorussia, the Council of Ministers of the Belorussian SSR, Belosofprof and the Central Committee of LKSMB [Lenin Young Communist League of Belorussia], with monetary prizes also being awarded.

In 1979, 20 farms achieved a return of nine or more kilograms of grain for each kilogram of mineral fertilizer applied. The highest results were obtained at the Progress Kolhoz in Grodnenskiy Rayon -- 10.4 kilograms of feed units and 9.5 kilograms of grain per kilogram of mineral fertilizer; the Zavety Lenina Kolhoz in Malaritskiy Rayon, where 9.5 kilograms of feed units and 9.1 kilograms of grain were obtained.

However, on many farms the return being realized from the use of mineral fertilizer is considerably lower than that planned. One reason for this -- the losses in fertilizers which occur as a result of numerous trans-shipments and overloading and also owing to incorrect storage. The scientifically sound dosages and nutrient ratios called for in the plans for their use are still not being followed in all areas and the agrotechnical requirements for the cultivation of agricultural crops are not being met.

All of these shortcomings are taking place in Shklovskiy, Matislavskiy, Kobrinskiy, Oshmyanskiy, Smorgonskiy, Verkhnedvinskiy, Sharkovshchinskiy, Narovlyanskiy and other rayons. Here the service which provides chemical services for the farms often tolerates disruptions in the work technology and this tends to lower the productivity of the fields.

A maximum return from fertilizers can be ensured only upon the condition that the most effective methods for applying them are properly combined. These include -- uniform distribution over an area, optimum depth of placement and so forth. However, the centrifugal spreaders being employed at the present time do not ensure uniform application of the mineral fertilizers and this is producing great differences in the agrochemical properties of the soil and in yields, it is causing plants of the same type to ripen at different times and in the final analysis it is resulting in crop losses.

The scientists must render substantial assistance in eliminating these phenomena. First of all, it will be necessary to create more improved machines and progressive technologies for the use of chemical resources. In addition, measures must be developed and introduced aimed at raising the fertility of soils, in the interest of achieving stable productivity for the land and improvements in the value of the arable land and in the effectiveness of the fertilizers.

Chemical services in behalf of animal husbandry must be introduced into operations on the farms in a more active manner. More extensive use must be made of chemical resources for improving the preservation of feed and raising its quality. Many unsolved problems still remain in connection with the preservation of feed and the technology for the use of preservatives, especially liquid preservatives.

A network of rayon laboratories has been created throughout the republic for the purpose of establishing systematic control over the quality of the feed. During the next few years, assuming that these laboratories will be fully supplied with

highly productive equipment and instruments, it will become possible to study the quality of all feed being procured. This in turn will make it possible to raise the quality of the rations being fed to the animals. This represents one very important reserve for increasing the production of animal husbandry products.

Improvements in the work of the agrochemical service will undoubtedly greatly aid the republic's agricultural workers in solving the tasks assigned by the October (1960) Plenum of the CC CPSU and the 23th Plenum of the Central Committee of the Communist Party of Belorussia and promote a further expansion of the competition among agricultural workers for the successful fulfillment of the plans for the current five-year plan.

COPYRIGHT: "Sel'skoye khozyaystvo Belorussii", 1961

7026

C50: 1824



LITHUANIA STRESSES IMPORTANCE OF PRIVATE SECTOR IN AGRICULTURE

Vilnius SOVETSKAYA LITVA in Russian 19 Feb 81 p 2

[Article by Kh. Markov, meritorious zootechnologist, Lithuanian SSR: "The Effectiveness of the Private Sector"]

[Text] The draft of the CPSU Central Committee to the 26th party congress foresees the continued growth of agricultural production in the private sector. Although the formation of all-union foodstuff reserves is the role of public sector, kolkhozes and sovkhoses, the private sector provides a significant supplement of field and farm products.

The possibilities for the private sector are enormous. At the present time, according to the data from the last all-union correspondence, there are over 360,000 families living in the rural areas of the republic. The private sector maintains 315,000 cows, or about 37 percent of the total number in all categories of enterprises; 506,000 hogs, or 20 percent; and domestic fowl--5.9 million birds or 43 percent. This type of saturation of the private sector with livestock and fowl enables it to produce up to 36 percent of the milk, 26 percent of the meat, 40 percent of the eggs produced annually.

The preservation of such a high level of agricultural production in the private sector is the result of the proper attitude toward the rural household on the part of local party, soviet and economic organs. Because of the support of the private sector, the private household produces foodstuffs for the needs of the family itself (incidentally, it is the primary source satisfying demand for milk, meat, potatoes and vegetables for the almost 1.5 rural residents of the republic) as well as for sale to enterprises and the state. During the last five-year plan kolkhozes and sovkhoses contracted with private households to purchase over 1.3 million calves for fattening. Almost every rural household that maintains livestock contracts to sell calves. During these years kolkhozes, sovkhoses and other agricultural enterprises have sold the population over 2 million piglets and 17.6 million young birds. This kind of mutual tie between the public enterprise and the private sector has a positive effect on the replenishment of foodstuff reserves.

In 1980 the private sector produced over 900,000 tons of milk and sold the state 541,000 tons. Calculated on the basis of one cow, an average of 1,677 kilograms per cow were procured. This is the highest indicator in the country. Almost one-third ton of milk, one-fourth of the meat and one-fourth ton of potatoes procured by the state comes from the private enterprises of the population. Moreover,

surpluses from the private plots are sold at markets. The private sector also plays a role of considerable importance in increasing the income of rural residents. According to data from the Lithuanian NII [Scientific research institute] on the Agricultural Economy, about 43 percent of the budget of a kolkhoz or sovkhos family comes from the income of this private enterprise.

Not long ago there were still people who said that the private enterprise took the kolkhoz peasant or sovkhos worker away from his work in the public sector. But an analysis indicates that over a period of a number of years the average number of days worked by these people comprises an average of 232-235 man-days per worker.

The draft of the CPSU Central Committee to the 26th party congress indicates that the private plot will remain an important source of additional agricultural products. A resolution on this question was recently passed by the CPSU Central Committee and the USSR Council of Ministers and entitled, "On Supplementary Measures to Increase the Production of Agricultural Products in the Private Enterprises of Citizens." It indicated that there remain a great many possibilities for increasing the production of meat, milk and other products in the private sector. Consequently, the role of the private sector in filling all-union foodstuffs reserves must increase.

Plans for the 11th Five-Year Plan consider the possibilities of the republic's private sector in the quotas for the production and sale to the state of agricultural products. In order to increase the average annual production of milk by 2.8-2.9 million tons, as called for by the quotas, it is essential to increase the public herd and the productivity of cows in the public sector during the next five-year plan. This level can be achieved if the plan indicators for production growth in kolkhozes and sovkhoses are fulfilled and if the milk yield per cow is increased to at least 3,200 kilograms per year in the private sector, assuming that the current commodity levels and herd size remain the same.

All of this requires more attention to the needs of the kolkhoz and sovkhos private plots. This is understood by the directors and specialists of enterprises. Many of them are striving to create the conditions needed for the development of the private enterprise, and we have acquired some good experience in this matter. In the Butrimonis Kolkhoz of Alitusekiy Rayon, for example, some large families maintain two cows and sell the state 5,000 kilograms of milk per year. Directors are giving special attention to the growth of marketability of products from the private sector. They fully provide livestock with feed. For veteran workers the kolkhoz procures and delivers hay. Procurers allocate 20 kilograms of mixed fodder for each quintal of milk sold and 200 kilograms for each quintal of pork (live weight).

In Ionishkskiy Rayon last year the Kolkhoz imeni Yu. Yanonis and the Kepalyay Kolkhoz sold significantly more milk and meat from the private sector than during the year 1979. In the rayon about 1,500 hectares of reclaimed cultivated pastures and meadows were allocated for private livestock and for haylands. Rural residents who sell milk and livestock to the state are supplied with concentrates and bedding material; builders from farms help them to repair the facilities in which the animals are housed. The population has acquired a considerable number of piglets and young birds for raising. On many farms potatoes and grains for private plots are cultivated on the same land. In this way we economize on labor and utilize technology and fertilizer more efficiently. People have more time to participate in public production.

At the present time in this republic 40 percent of rural families live in homesteads. Among them are older people who cannot participate fully in public production but who make a useful contribution while working in their private enterprises, where they can produce meat and milk, thereby helping the public sector to fulfill its quotas.

In dealing with the questions of further developing private enterprises certain difficulties arise that are organizational and technical in nature. On the basis of the aforementioned resolution of the CPSU Central Committee and the USSR Council of Ministers, we should improve the system of planning and take tasks down to rayons and enterprises. In the past a situation developed in which the directors of enterprises did not bear direct responsibility for the organization and fulfillment of plans of sales to the state from the private enterprises of citizens living on the property of the enterprise. In connection with this various types of problems developed and the interests of the population were limited.

In order to avoid such problems in the future, I propose that the point of the draft of the CPSU Central Committee to the 26th party congress in the section entitled, "The Development of the Agro-Industrial Complex," be expanded to include a proposal on the procurement of agricultural products in the following terms: "With the aim of organizing production planning and the procurement of livestock products, of increasing the responsibility of directors of enterprises for the condition of livestock raising in the private sector to establish a single plan for kolkhozes and sovkhoses regarding the sale of livestock products to the state, including sales from the private plots of citizens."

In our opinion, the organization of centralized shipping for the procured livestock and milk using special transportation equipment belonging to the ministry of the meat and dairy industry is very interesting. For this reason the section that states, "To improve the organization and methods of procurement," should be expanded to include the words, "To extend the order for the reception and centralized shipping of milk and livestock from the place where it is produced to include the products procured in private enterprises of the population."

8228

CSO: 1800/329

## AGRO-ECONOMICS AND ORGANIZATION

### IMPROVING THE EFFICIENCY OF MILK PRODUCTION COMPLEXES

Moscow FINANSY SSSR in Russian No 1, Jan 81 pp 47-53

[Article by I.V. Ushakov, deputy chief of Administration for Financing of Agriculture of USSR Ministry of Finances; N.L. Prokof'yev, senior expert; G.T. Kastko, senior economist: 'Methods for Raising the Efficiency of Milk Production Complexes (Based Upon the Example of Sovkhozes in the Chuvashskaya ASSR)']

[Text] In 1977, there were 19 dairy complexes in operation in the Chuvashskaya ASSR (including 12 maintained on the balance of sovkhozes), in 1978 their number increased to 22 (14 sovkhoz) and in 1979 -- 29, of which number 18 were of the sovkhoz type. In 1979, the number of animal billets actually introduced into operations at complexes was 8,902, an increase of 17 percent over the figure for 1978 and the value of the fixed productive capital at the end of the year reached 21.9 million rubles, that is, it increased twofold above the figure for 1977.

In the construction of dairy complexes, the goal was established of creating large specialized enterprises for the production of milk and providing them with an improved technology. This would make it possible to increase the production of dairy products and lower production costs while reducing labor expenditures per unit of output.

An analysis of the operations of milk production complexes and commodity-dairy farms, operating at sovkhozes, reveals that in 1979 the average milk yield per forage cow here was 2,416 kilograms, or 244 kilograms more than the average for sovkhozes throughout the republic. The average production cost per quintal of milk produced in 1979 by the complexes was 97 kopecks lower than that for sovkhozes on the whole. In 1979, the labor expenditures for the production of 1 quintal of milk at the complexes was 8.9 man-hours, or 1.2 man-hours less than at sovkhozes throughout the republic.

However, at the present time the dairy complexes in the Chuvashskaya ASSR are not coping with the task assigned to them and this is adversely affecting the supplying of animal husbandry products for the population.

In 1979, the republic's sovkhoz dairy complexes produced 17,900 tons of milk, or an increase of 20 percent above the figure for 1978. However, the plan was fulfilled by only 83 percent and the actual production reached only 63 percent of the planned capability. Approximately 7.4 percent of the overall amount of milk



produced was obtained at kolkhozes and sovkhozes throughout the republic and the number of cows at the complexes amounted to 6.7 percent of the overall number.

The sovkho milk production complexes in the Chuvashskaya ASSR are seen as large subunits in the structure of the sovkhozes and they have at their disposal all of the principal and auxiliary facilities required for producing the given product, with these facilities being joined together by a technological process and located on the same territory.

The complexes differ from conventional farms in terms of their relatively higher specific capital expenditures. For example, the cost for one animal billet on 1 January 1980, at milk production complexes at the Vostok Sovkhoz, was 2,248 rubles, at El'barusovskiy Sovkhoz -- 2,490 and at the Rassvet Sovkhoz -- 3,250 rubles. On the remaining farms of the mentioned sovkhozes, it equalled 321 rubles, 740 and 1,208 rubles respectively.

During the course of operating the dairy complexes, technical shortcomings were revealed which served to underscore the need for modernizing the engineering lines of communication and replacing equipment. However, this increased the cost of the complex and also the cost of one animal billet.

The cost for one animal billet at the complex of the Vostok Sovkhoz, following modernization and the replacement of equipment, increased by 165 rubles and amounted to 2,413 rubles, at the El'barusovskiy Sovkhoz -- 296 rubles and reached 2,786 rubles and at the Rassvet Sovkhoz -- by 207 rubles (3,457 rubles). The complex of the El'barusovskiy Sovkhoz, in addition to the additional expenditures for modernization, requires 235,900 more rubles.

The standard plans employed for the construction of the dairy complexes in the Chuvashskaya ASSR were not experimentally tested under local conditions and this led to additional expenditures for modernization and improving the equipment.

A study of the work being carried out in the various areas and an analysis of primary accountability have revealed that practically all of the republic's dairy complexes failed to achieve their planned indicators and did not fulfill their milk production plans.

For example, milk production at the complex of the Vostok Sovkhoz in Marposadskiy Rayon increased by a factor of 1.9 during the 1975-1979 period and still, during this same period, the plan was not fulfilled on even one occasion. In 1979, 7,677 quintals were obtained against a plan calling for 8,766 quintals, that is, the plan was fulfilled by only 87.5 percent. The actual milk yield amounted to 63.9 percent of the level called for in the plan.

A similar situation was observed at the El'barusovskiy Sovkhoz in Marposadskiy Rayon, at the Sovkhoz imeni 50-Letiya SSSR in Cheboksarskiy Rayon and at the Kuvakinskiy Sovkhoz in Alatyrskiy Rayon. The dairy complex of the Rassvet Sovkhoz in Tsivil'skiy Rayon, after increasing its herd from 400 to 526 in 1979, failed to achieve its planned production indicator (plan -- 12,320 quintals, actual -- 10,788 quintals).



The great difference between actual milk production at the complexes and their planned capabilities is explained by a number of factors.

First of all, not all of the available animal billets are being filled by milking cows. In 1978, 81 percent of the billets were used and in 1979 -- 83.3 percent. Such low rates of use are explained by the failure to supply the complexes with sufficient animals (Kuvakinskiy complex in Alatyrskiy Rayon and the Kugeyevskiy complex in Marposadskiy Rayon) and also by the fact that in many instances the animal billets, which are equipped for use by cows, are occupied by heifers.

Thus, at the El'barusovskiy Sovkhoz in Marposadskiy Rayon, the complex has a capability for maintaining 400 cows and yet it contains no facilities for heifers, required for the planned renovation of the herd (up to 20 percent annually). As a result, in 1979 the complex maintained 360 cows, with the remaining billets being occupied by heifers. A similar situation prevails at the complex of the Vostok Sovkhoz. Here, in 1975, 255 animal billets were placed in operation and 220 head of large-horned cattle were accommodated. In 1976, the number of animal billets came to 375, with 355 occupied by cows. In 1977, all of the planned animal billets were in operation (400) and commencing with this period the average annual number of cows maintained has been 364, that is, 91 percent. Heifers have been maintained in the remaining billets.

Secondly, the average milk yield actually obtained from one cow is less than the level called for in the plan. In 1979, the average milk yield for one cow at the republic's sovkhos complexes was 2,416 kilograms of milk, or 296 kilograms more than that obtained at the remaining sovkhos farms. Moreover, it exceeds by 203 kilograms the milk yields for all of the republic's sovkhoses and kolkhoses. However, the milk yield decreased by 102 kilograms compared to 1977.

The productivity of the animals is considerably lower than the planned level. In 1979, the average milk yields per cow exceeded 3,000 kilograms of milk at only two of the 18 complexes and at three farms the yields were lower than 2,000 kilograms.

A serious shortcoming in the work of the dairy complexes is the fact that they are not being supplied with highly productive animals. In a number of rayons, the proper raising and preparation of the animals for an industrial technology has not been organized and there is a shortage of breeding and reproduction farms.

At the complex of the Vostok Sovkhoz, the average yield per cow in 1979 was 2,109 kilograms, against a plan which called for 3,000 kilograms. The complex was supposed to have completed its replacement of the low productivity Krasnogorbatovskaya strain with the Chernopestraya strain prior to reaching its planned capability (October 1978). However, such replacement had still not been completed in 1980.

In 1979, the average yield obtained from one cow at the complex of the El'barusovskiy complex was 2,244 kilograms, against a plan calling for 3,000 kilograms annually. In accordance with the 1979 plan, each cow was to furnish 2,225 kilograms of milk and thus the plan was fulfilled by 100.9 percent. Such a low level for the plan indicators, compared to the plan, is explained by insufficient feed supplies and also by the poor production conditions on the farms of the complex.

For the sovkhos on the whole, a milk yield of 2,283 kilograms per cow was obtained in 1979 against a plan calling for 2,310 kilograms. At the Togayevskaya Commodity-Dairy Farm, where 98 cows are maintained, 2,811 kilograms were actually obtained against a plan calling for 2,810 kilograms. At the complex, there were cows of the Krasnogorbatovskaya strain and at the Togayevskaya Farm -- Simmental'skaya and Chernopestraya strains. A high level of humidity prevails on farms on the complex. The Togayevskaya farm was built using wood and here the air is dry, that is, fine conditions exist for the maintenance of cows.

The changes in cow productivity (in kilograms) at milk production complexes and at sovkhos farms, for the 1975-1979 period, are reflected in the data furnished in Table 1 (in kilograms).

TABLE 1

	1975 r.	1976 r.	1977 r.	1978 r.	1979 r.	1979 r. in % to 1975 r. (1976 r.) (1)
(2) Совхоз «Восток»						
(3) комплекс	1877	1651	2147	1741	2109	112,4
(4) фермы	2745	2078	2539	2040	2224	81,0
(5) Итого по совхозу	2272	1759	2279	1839	2154	94,8
(6) Совхоз «Эльбарусовский»						
(3) комплекс	—	2153	2286	2055	2244	104,2
(4) фермы	—	2453	3351	2817	2811	114,6
(5) Итого по совхозу	—	2214	2548	2224	2383	107,6
(7) Совхоз «Россия»						
(3) комплекс	—	2008	2295	2223	2050	102,1
(4) фермы	—	458	1804	2215	2310	158,4
(5) Итого по совхозу	—	1874	2124	2211	2144	114,4

Key:

- |                             |                           |
|-----------------------------|---------------------------|
| 1. 1979 in % of 1975 (1976) | 5. Total for sovkhos      |
| 2. Vostok Sovkhos           | 6. El'barusovskiy Sovkhos |
| 3. Complex                  | 7. Rossiya Sovkhos        |
| 4. Farms                    |                           |

Analysis reveals that almost no increase in animal productivity took place at the three complexes examined during the 1975-1979 period. The productivity of cows at sovkhos complexes is lower than that for the farms. Thus, for the El'barusovskiy Sovkhos, the productivity of the cows at the complex in 1979 amounted to only 80 percent of the productivity of the cows on other farms of the establishment, for the Rossiya Sovkhos -- 89 and for the Vostok Sovkhos -- 94 percent.

Not one of the mentioned farms reached its planned productivity (3,000 kilograms), nor did they fulfill their plan for selling milk to the state. During 4 years of the five-year plan, the Rassvet Sovkhos underfulfilled its plan for selling milk to the state by 9,662 tons.

The actual fat content of the milk at the complexes is lower than the basic level, as a result of which the record weight for the products is lower than the physical

weight. At the complex of the El'barusovskiy Sovkhoz, owing to the fact that in 1979 the actual fat content of the milk (3.5 percent) was lower than the basic fat content (3.8 percent), at delivery time 1,216 quintals less were credited than the amount actually turned over to the state.

In 1979, the republic's sovkhos complexes specializing in milk production sustained losses amounting to 908,000 rubles from their production operations and their average loss rate was 16.5 percent. According to the 1979 results, only five of the 18 complexes operated at a profit. The remaining 13 sustained losses.

An analysis of the financial-economic activities of complexes at the El'barusovskiy, Rassvet, imeni 50-Letiya SSSR and other sovkhoses has revealed that milk production at these facilities was unprofitable commencing with the moment they first entered operations. For example, at the complex of the Vostok Sovkhoz the plan called for an annual profit of 71,000 rubles from the sale of its products. However, during the 1975-1979 period its losses amounted to 418,500 rubles.

These unprofitable operations derive from the fact that the production costs for the milk being produced by the complexes annually exceed the existing sales price. Both the earnings and the production costs for the milk are increasing. However, the rates of growth for the production costs are higher than the rates of growth for the earnings. This can be seen in the operational data for the Rassvet Sovkhoz in Tsivil'skiy Rayon (see Table 2).

TABLE 2

(rubles - kopecks)				
Название показателя (L)	1976 г.	1977 г.	1978 г.	1979 г.
(2) Себестоимость 1 ц реализованного молока	37-71	34-02	37-77	46-57
(3) Выручка от продажи государству 1 ц молока	24-04	25-83	25-29	29-42
(4) Убыток от реализации 1 ц молока	13-67	8-19	12-48	17-15

Key:

1. Indicator
2. Production cost per quintal of milk sold

3. Earnings from sale to the state of 1 quintal of milk
4. Loss from the sale of 1 quintal of milk

The loss from the sale of 1 quintal of milk in 1979, as you can see above, reached 17 rubles and 15 kopecks, compared to 13 rubles and 67 kopecks in 1976.

In 1979, in the interest of determining the influence of various factors on the efficiency of output production, an analysis was carried out at the sovkhos dairy complexes of the Chuvashskaya ASSR using the method of groupings. The complexes were grouped according to profitability (see Table 3), milk yield per cow, complete production cost per quintal of milk sold to the state, labor productivity and capital-labor ratio.

Of the five dairy complexes in the first group, which completed 1979 with a profit, only one (imeni 25th CPSU Congress in Cheboksarskiy Rayon) had a profitability on

the order of 13.7 percent. For the remaining complexes, the profitability fluctuated at the level of from 1.2 to 2.9 percent.

TABLE 3

№ группы (1)	Количество хозяйств в группе (2)	Пределы рентабельности (3)	Выполнение плана производства молока (%) (4)	Процент заполнения скотом (5)	Среднегодовая выработка на одну корову (кг) (6)	Себестоимость производства 1 ц молока (руб. - коп.) (7)	Расход кормов на 1 ц молока (кг) (8)
1	5	{9} рентабельные {10} более 0	91,4	89,4	2790	29-59	1,31
2	8	{11} убыточные {12} от 0 до -25	83,7	83,2	2311	39-63	1,52
3	5	{13} от -25	68,1	72,1	2006	49-100	1,73

Key:

- |  |   |
|--|---|
| 1. Group number                                  | 7. Production cost for production of 1 quintal of milk (rubles - kopecks) |
| 2. Number of farms in group                      | 8. Feed consumption per quintal of milk (quintals of feed units)          |
| 3. Limits of profitability                       | 9. Profitable   |
| 4. Fulfillment of milk production plan (%)       | 10. More than 0   |
| 5. Percent of filling of animal billets          | 11. Unprofitable  |
| 6. Average annual milk yield per cow (kilograms) | 12. From 0 to 25  |
|  | 13. From 25   |

An analysis of the data furnished in Table 3 makes it possible to draw the following conclusion. If milk production is to be profitable, the complexes must have the following average indicators:

- ...fulfill the production plan by no lower than 90 percent,
- ...the available animal billets must be filled with cows by no less than 90 percent,
- ...the average annual milk yield per cow must be no less than 2,800 kilograms of milk (based upon the percentage of fat content, which existed for the group in 1979),
- ...expend no more than 29.6 rubles for the production of 1 quintal of milk,
- ...expend 1.3 quintals of feed units per quintal of milk.

The stated criteria for profitable milk production at sovkhos complexes throughout the republic are average indicators for the first group, where the average profitability in 1979 was 2 percent.

It bears mentioning that the economic indicators for farms in a group of complexes which operated at a profit in 1979 fluctuated within broad limits:

- ...filling of animal billets -- from 86 to 106 percent,
- ...average annual milk yield per cow -- from 2,331 to 3,200 kilograms of milk,



...feed consumption per quintal of milk -- from 1.1 to 1.6 quintals of feed units,

...percent of plan fulfillment -- from 82 to 104,

...production cost for production of 1 quintal of milk -- from 26 rubles and 94 kopecks to 31 rubles and 77 kopecks.

Hence the conclusions: 1) there are various means by which dairy complexes can operate at a profit, 2) each farm has strong reserves for raising production profitability.

The economic services of sovkhoses, based upon existing opportunities and taking into account the peculiarities of each individual farm, can and must find the means for raising the profitability of the dairy complexes.

The profitability of dairy complexes is determined by the production cost for 1 quintal of milk and the average existing sales price for it. In 1979, the fluctuations in average earnings for the groups, for 1 quintal of milk, were minimal, while at the same time the production cost for 1 quintal of milk in the third group of complexes, with a loss rate lower than 25 percent, was higher by a factor of 1.7 than in the first group (profitable complexes). Consequently, when determining the means to be employed for raising the profitability of the complexes, a maximum amount of attention must be concentrated on analyzing the reasons for the high production cost for the production of milk.

TABLE 4

Grouping According To Complete Production Cost Per Quintal of Milk Sold To the State

(1) № группы	(2) Число хозяйств в группе	(3) Пределы стоимости молока в руб. - группа (руб. - диапазон)	(4) Средняя стоимость молока в руб. - группа (руб. - сред.)	(5) Заполняемость	(6) Расход кормов на 1 ц молока (ц. с.з.)	Структура затрат на производство молока, (%) (7)						
						(8) зарплата	(9) затраты на корма	(10) амортизация основных средств	(11) текущий ремонт основных средств	(12) прочие основные затраты	(13) общая стоимость основных средств в среднем на хозяйство	(13)
1	6 (14)	до 30	30-70	95,5	1-30	22,1	48,8	7,2	4,0	6,6	11,3	
2	7	30-40	40-14	81,5	1-58	15,8	46,4	9,4	5,1	9,6	13,7	
3	4	40-90	49-90	72,1	1-72	16,1	41,3	12,2	3,4	17,0	10,0	

Key:

1. Group number
2. Number of complexes in group
3. Range for production cost per quintal of milk sold in a group (rubles), in a calculation for record weight
4. Average production cost per quintal of milk in a group (rubles - kopecks)
5. Filling of animal billets, (%)
6. Feed consumption per quintal of milk (quintals of feed units)
7. Structure of expenditures for milk production, (%)
8. Wages
9. Feed expenditures
10. Amortization of fixed capital
11. Current repair of fixed capital
12. Other principal expenditures
13. Miscellaneous production and miscellaneous farm expenditures
14. Up to 30
15. More than 40



The principal item in the structure of expenditures for milk production is feed expenditures. At complexes of the first group, the proportion of feed expenditures is 7.5 points higher than that for the third group. At the same time, the expenses for producing 1 quintal of milk in the first group are 5 rubles and 61 kopecks or 37 percent lower than those for complexes in the third group, where 1.3 times more feed is expended for the production of 1 quintal of milk than in the first group.

A comparatively low proportion of feed expenditures at complexes having a high production cost per quintal of milk is explained by great expenditures for other items of calculation. Here the withholdings for the amortization of fixed capital and other principal expenditures are especially high.

The amortization deductions for complexes in the third group are higher by a factor of almost three than those for the first group and other principal expenditures in the third group are higher by more than a factor of four than those in the first group.

The amount of the amortization deductions per quintal of product is dependent upon the value of the fixed capital, the productivity of the animals and the percentage of filling of the available animal billets with cows. At farms of the third group, this filling percentage is 23.4 points lower than that for the first group.

At the Vostok Sovkhoz in Marposadskiy Rayon, the dairy complex of which belongs to the third group, an analysis was carried out during the 1975-1979 period for the purpose of establishing the reasons for the large "other principal expenditures" and deciding upon means for lowering them: the fluctuations -- from 2 rubles and 22 kopecks in 1977 to 12 rubles and 43 kopecks in 1978. Among the other expenditures, the proportion for fuel expenses is considerable. In the interest of reducing these expenses, the complex was converted over from heating with solid fuel (coal and briquettes) to electrical heating in late 1978. In 1978, transport expenditures increased sharply as a result of unfavorable weather conditions. Caterpillar tractors were used in place of motor vehicles and wheeled tractors. The transport expenditures decreased in 1979, heating costs declined and this made it possible to lower the other principal expenditures to 7 rubles and 31 kopecks. In addition to the mentioned items, the "other principal expenditures" also include expenses for acquiring light implements, medicines and special clothing, for veterinary-sanitary measures, for water and electrical supply services and others.

During the course of the above analysis, it was established that the data in Form 22 for calculating the production cost per quintal of milk, using all expenditure elements at the complex of the Vostok Sovkhoz, is at variance with similar data furnished in the initial accounting. For example, the "other principal expenditures" shown in Form 22 exceed by more than a factor of two the data provided in the initial accounting for this same item of expenditure. Such a situation in accounting inhibits the carrying out of analytic work and it can lead to incorrect conclusions and to a reduction in the effectiveness of measures prepared by the republic's organs of control for the purpose of developing this important branch of agriculture.

Feed costs and wage expenditures constitute two thirds of the production costs for milk and thus they require special detailed analysis.

The intensity of use of the fully staffed and completed facilities is dependent upon the feeding level for the animals. The animals, in a calculation per head, must be provided with maximum dosages of full-value feed.

It is difficult to monitor the interrelationship between the amount of feed expended per cow and the profitability of the dairy complexes in the Chuvashskaya ASSR, under the operating conditions which prevailed in 1979, since the amount of feed expenditures was influenced decisively by the amount required to obtain 1 quintal of milk. Thus the complex at the Sovkhoz imeni 25th CPSU Congress, where feed expenditures per quintal of milk in 1979 amounted to 1.1 quintals of feed units, was placed in the third group of farms, where the feed costs per cow are less than 30 quintals of feed units annually. The complex at the Rassvet Sovkhoz, where the feed expenditures exceeded the norm by a factor of 2.5, was placed in the first group of farms, where the feed expenditures per cow exceed 41 quintals of feed units annually.

In order to eliminate the effect of feed over-expenditures per quintal of milk, the complexes were grouped according to the amount of feed fed to the animals, based upon normative expenditures (1.3 quintals of feed units). The new grouping revealed that the more feed expended per cow at the complexes, the higher the milk yields, the lower the production cost per quintal of milk and the better the financial results of production (in the given instance, a lower rate of loss).

A guaranteed feed base must first of all be created in advance in order to ensure the rapid development of the productive capabilities of dairy complexes. In those areas where a feed base is created at least 1 year in advance of the placing in operation of animal husbandry complexes, continuous full-value feeding of the animals and constant improvements in their productivity are ensured commencing with the very first days of operations. Meanwhile, a study of the status of affairs in the various areas has shown that insufficient attention is being given to the creation of cultivated pastures, the areas sown in forage crops are not being expanded, feed crop rotation plans are not being introduced into operations in all areas and the storage and proper utilization of feed are not being carried out properly.

Thus, in the interest of ensuring that the animals at the Vostok Sovkhoz are provided with locally produced feed, the plans called for long-term cultivated pastures to be created on an area of 140 hectares. However, these pastures have yet to be created and this is adversely affecting the ability of the sovkhov to supply the animals with locally produced feed.

In 1979, the dairy cattle at the Vostok Sovkhoz were supplied with feed to the level of 82.4 percent. This low level of support and lack of balance in terms of nutrient requirements led to an over-expenditure of feed per unit of product. Of the overall quantity of feed procured by the farm, 27.5 percent was purchased on the side. The cost for 1 quintal of feed units of purchased feed is 16 rubles and 22 kopecks and the cost for 1 quintal of feed units of locally produced feed -- 13 rubles and 56 kopecks.

The high production cost for locally produced feed is explained by the low cropping power for the agricultural crops. In 1979, the cropping power for grain crops at the sovkhov was 11.7 quintals against a plan calling for 22.1 quintals and the

production cost per quintal of grain -- 22 rubles and 58 kopecks against a plan calling for 8 rubles and 70 kopecks, or higher than the planned cost by a factor of 2.5. The cropping power for potatoes -- 102 quintals against a plan calling for 150 quintals per hectare and the production cost -- 16 rubles and 34 kopecks against a plan calling for 8 rubles and 80 kopecks. The production cost for food roots was higher than that planned by a factor of two.

As a rule, purchased feed is more expensive than internally produced feed. Thus, in 1975, 1 quintal of feed units of purchased feed was 4.4 times more expensive for the Vostok Sovkhoz than internally produced feed. This difference has decreased somewhat since 1977 owing to the fact that the sovkhos has begun receiving comparatively cheap feeds: malt residue and food remnants.

Roughly the same situation prevails at the El'harusovskiy Sovkhoz: during the 1976-1979 period, feed expenditures for producing 1 quintal of milk fluctuated from 11 rubles and 18 kopecks to 15 rubles and 62 kopecks.

The feed cost for producing a unit of product is dependent upon the feed expended and its production cost.

An analysis of the data cited reveals that a certain reduction has taken place in feed expenditures per unit of product.

In 1976 and 1977, at which time the animals were comparatively well supplied with feed, according to accounting data, the feed expenditure per quintal of milk was 1.8 quintals of feed units. The causes of feed over-expenditures include low feed quality, lack of balance in terms of components and poor preparation for feeding.

The production cost per quintal of feed units is constantly increasing: from 1976 to 1979, it increased from 7 rubles and 76 kopecks to 13 rubles and 12 kopecks, that is, by 69 percent. This is explained by the fact that the farm does not provide its animals with internally produced feed and is forced to use purchased feed, the proportion of which is increasing. In 1976, purchased feed constituted 17.5 percent of the overall amount, in 1978 -- 23, in 1979 -- 50 percent. The cost for 1 quintal of feed units of purchased feed is considerably higher than the cost for 1 quintal of feed units obtained from internally produced feed. Thus, in 1979, 1 quintal of feed units from purchased feed cost 15 rubles and 61 kopecks and that from internally produced feed -- 10 rubles and 64 kopecks. The production cost for 1 quintal of feed units from internally produced feed is increasing. In 1976 it equalled 6 rubles and 70 kopecks and in 1979 -- 10 rubles and 64 kopecks. This is explained by the low cropping power of the agricultural crops (see Table 5).

During the 1975-1979 period, the planned feed expenditures at the dairy complex of the Rassvet Sovkhoz remained at practically the same level (fluctuations from 1.2 to 1.3 quintals of feed units per quintal of milk), while at the same time the planned expenditure of feed per unit of product slightly exceeded the planned level (1.15 quintals of feed units). Actual feed expenditures during this period exceeded the planned expenditures to a considerable degree. The constant over-expenditure of feed is not being analyzed by the management of the sovkhos or by the higher agricultural organs. Meanwhile, in 1979, the feed expenditures per quintal of milk reached 2.48 quintals of feed units, or 2.5 times higher than the planned level (1.15).

An analysis of the feed requirements and expenditures has revealed that in a calculation for actual milk produced, the farm was fully supplied with internally produced feed throughout all of the years (with the exception of 1978). However, during this same period, 19,971 quintals of feed units obtained from purchased feed valued at 205,301 rubles were procured and expended. During the 1975-1979 period, milk production at the complex of the Rassvet Sovkhoz involved a feed over-expenditure of 60,237 quintals of feed units. In 1979 alone, 16,329 quintals of feed units valued at 167,862 rubles were over-expended.

TABLE 5

(quintals per hectare)					
	1975 r.	1977 r.	1978 r.	1979 r.	
				plan (6)	actual (7)
(1) Яровые зерновые	12,7	21,3	18,7	21,7	11,3
(2) Картофель	171,7	138,6	82,4	175,0	128,9
(3) Силосные культуры	48,9	319,0	93,2	350,0	143,7
(4) Многолетние травы на сено	4,6	13,6	42,0	40,0	71,1
(5) Корновые корнеплоды	247,3	387,8	385,0	350,0	187,3

Key:

1. Spring grain crops	5. Food roots
2. Potatoes	6. Plan
3. Silage crops	7. Actual
4. Perennial grasses for hay	

During the construction of the complexes, the task was assigned of mechanizing the production of milk, facilitating the labor of the workers engaged in animal husbandry and lowering labor expenditures per unit of product. A study has revealed that the desired results are not always being achieved. For example, the planned labor expenditures per unit of product at the animal husbandry complex of the El'barusovskiy Sovkhoz should have equalled 5.6 man-hours, whereas in 1976 they actually amounted to 12.1 man-hours, in 1977 -- 12.1, in 1978 -- 10.5 and in 1979 -- 10.1 man-hours. Thus, although a certain reduction took place in their level per unit of product, they nevertheless remained considerably higher than the plan.

The large labor expenditures per unit of product are explained by the fact that the issuing of feed and removal of manure involve considerable amounts of manual labor. The manure removal system planned for the complex has not proven its worth. The canals, especially in those areas where the gate valves are located, become clogged up by solid fractions of manure and the workers are forced to draw off the liquid manually using pails. During January 1980 alone, at one of the farms of the complex, 4,516 man-hours in excess of the plan and wages totaling 2,068 rubles were expended for carrying out this work.

Moreover, the system does not permit the use of straw as bedding and the farm does not have sawdust. The absence of bedding affects the condition of the animals and, naturally, also their productivity. A raised moisture content in a dairy barn results in an outbreak of the mastitis disease. The cows lose their productivity prematurely and the productivity of the herd is lowered.

In conformity with the plan for the complex, the issuing of feed must be carried out by means of a belt conveyer. However, a conveyer has never been installed.



Moreover, owing to the structure of the facility, no success has been achieved in using a tractor or horse-drawn unit for distributing the feed and thus this work is being performed manually. This also affects labor productivity and output production costs.

The feed preparation shop is capable of processing succulent feeds (root crops, potatoes). Coarse feeds are included in the ration given to the animals at the complex. The fermenting and crushing of straw are not being carried out in the feed preparation shop (it is being conducted on other farms of the sovkhos). And this adversely affects the productivity of the animals and the effective use of the feed.

A comparison of the economic indicators for the dairy complexes and other farms of the Rassvet, El'barusovskiy and Vostok Sovkhoz has revealed that labor productivity is higher at the commodity-dairy farms than it is at the complexes and this is associated with the productivity of the animals.

Labor productivity is improving slowly, albeit somewhat faster on the farms than at the dairy complexes. In 1976, 3,802 rubles worth of products were produced at the Rassvet Sovkhos per average annual farm worker and in 1979 -- 4,825 rubles worth, that is, an increase in labor productivity of 26.9 percent. At the complex, there was only a two percent increase. At the El'barusovskiy Sovkhos, this same indicator was 30 percent and 9.8 percent respectively.

The capital-labor ratio for workers at the complex is considerably higher than that for the farms. For example, during 1979 the figure for complexes of the Rassvet Sovkhos was 23,000 rubles (farm -- 11,500 rubles) and the capital-output ratio for the commodity dairy farms exceeds to a considerable degree the capital-output ratio for the complexes (for example, the complex of the Rassvet Sovkhos during 1979 -- 0.15 rubles; farm -- 0.42 rubles).

Labor productivity at the animal husbandry complex of the El'barusovskiy Sovkhos is somewhat higher than that on the farms. Thus, in 1979 the labor productivity for one individual working at the complex was 4,171 rubles and on the commodity-dairy farms of the sovkhos -- 3,668 rubles. At the same time, the capital-labor ratio for the complex is higher by a factor of 6.3 than that for the farms (23,878 : 3,781).

A large portion of the fixed capital of the complex has to do with the value of the buildings; they are equipped with only a small number of mechanisms. Hence, in the complexes, just as on the farms, the labor expenditures per unit of product are high. At the El'barusovskiy Sovkhos, one milkmaid at the complex normally handles 25 cows and on the farm, where the milking is carried out manually -- 18.

A similar situation prevails at the Vostok Sovkhos. The actual workload per worker at the complex is 3.5 head and on the remaining farms -- 9.1. This derives from the fact that a complex requires more service personnel.

In 1979, labor productivity per individual worker at the complex of the Vostok Sovkhos amounted to 3,654 rubles (on the farms -- 4,746 rubles). Here the labor expenditures (direct) per quintal of milk show a tendency to decrease: in 1975 --

18.6 man-hours, in 1979 -- 9.2 man-hours. However, they are higher than on other farms of the sovkhos (in 1979 -- 8.9 man-hours).

The dependence of labor productivity upon other factors can be seen in the data furnished in the Table 6 grouping.

TABLE 6

Grouping According To Labor Productivity

№ группы (1)	Количество комплексов в группе (2)	Пределы про- изводитель- ности труда по группам (тыс. руб.) (3)	Средняя произво- дительность труда в сопоставимых ценах 1973 г. (руб.) (4)	Масса молока на одну корову в год (кг) (5)	Нагрузка на одного работ- ника (коров) (6)	Финансовый показатель (7)	
1	7	(6)	самые 6	6504	2525	8,6	21 971
2	6	(9)	от 5 до 6	5574	2482	8,0	13 803
3	5	(10)	менее 5	3889	1977	6,6	33 281

Key:

- |  |                                   |
|--|-----------------------------------|
| Group number   | 5. Annual milk yield per cow (kg) |
| 2. Number of complexes in group                                  | 6. Workload for one worker (cows) |
| 3. Limits of labor productivity by groups (thousands of rubles)  | 7. Capital-labor ratio            |
| 4. Average labor productivity in comparable 1973 prices (rubles) | 8. More than 6                    |
|  | 9. From 5 to 6                    |
|  | 10. Less than 5                   |

The analysis once again confirms the statute: labor productivity is directly proportional to the productivity of the animals and the workload per individual worker. There is no direct link between the capital-labor ratio and these indicators.

The financial result of the economic activities of complexes, in addition to the production cost and factors affecting its size, is dependent upon the profit realized from products sold. The average sales prices at the complexes, for 1 quintal of milk sold to the state, are constantly increasing. In 1975, the profit from 1 quintal of milk at the dairy complex of the Vostok Sovkhoz was 22 rubles and 44 kopecks and in 1976 -- 30 rubles and 39 kopecks. The increase of 37.6 percent was caused by two factors: changes in the delivery prices for milk; improvement in the quality of the milk delivered.

In 197<sup>c</sup>, 19.9 percent of the milk was classified as being of 1st grade quality, 68.3 percent -- 2d grade quality and 11.8 percent -- non-graded. In late 1977, a department was placed in operation for the cooling of milk. In 1979, 96 percent of the milk delivered to the state was of 1st grade quality and four percent of 2d grade quality.

In 1979, for the republic's sovkhos complexes on the whole, the average price for 1 quintal of milk sold was 30 rubles and 03 kopecks. Conditions have been created for improving the quality of the milk. Material incentives are issues to those workers who record the best indicators for quality. In 1979, in accordance with the statute on wages in animal husbandry, the workers at the complex of the Sovkhoz imeni 50-Letiya SSSR were issued a bonus of 7,008 rubles for having supplied cooled milk of 1st and 2d grade quality.

COPYRIGHT: "Finansy SSSR", 1981

DISCUSSION OF PRIVATE PLOT LIVESTOCK OPERATIONS

Feed Needs of Livestock Breeders

Moscow SEL'SKAYA ZHIZN' in Russian 10 Mar 81 p 4

[Article by A. Denisov, distinguished RSFSR lawyer: "Supplying Feed to Livestock"]

[Text] [Reader's Request for Legal Advice]

"One of the reasons why private individuals keep little livestock on their private farms are the difficulties in furnishing feed for the livestock. What additional measures are being taken in this matter?" asks A. Khayrullin of Bashkirskaya ASSR.

[Legal Expert's Answer]

The decree adopted in September 1977 by the CPSU Central Committee and USSR Council of Ministers, entitled "On Private Subsidiary Farms of Kolkhoz Members, Workers, Employees and Other Private Individuals and on Collective Fruitgrowing and Market Gardening," and a number of other normative documents have provided that the executive committees of local soviets of people's deputies, kolkhozes, sovkhoses and other enterprises, organizations and institutions are required to furnish individuals who have their own livestock plots of land for pasturing the livestock and for cutting hay.

In January 1981 the decree of the CPSU Central Committee and USSR Council of Ministers entitled "On Additional Measures To Increase the Production of Agricultural Products on Private Subsidiary Farms of Individuals" noted that many local soviet and agricultural authorities are showing little concern about allocating hayfields and pasture areas in good time to private individuals who have their own livestock, to making transportation available for carrying the feed that has been prepared, and to providing assistance in organizing the pasturing of livestock.

A new decree of the CPSU Central Committee and USSR Council of Ministers discusses additional measures to solve this problem. Soviet and agricultural authorities, and directors of kolkhozes, sovkhoses and other agricultural enterprises must take additional steps to improve the supply of feed for livestock and poultry on the private farms of individuals.

Plots of land for cutting hay and for pasturing livestock are to be made available on a long-term basis if possible to kolkhoz members, workers, employees and other individuals conscientiously participating in social production and to retired persons who on their own subsidiary farms have cattle, sheep and goats. They are to use for this purpose in accordance with procedure the farmland of kolkhozes and sovkhoses, state reserve land, and state forestland, land of industrial, transportation and other nonfarming enterprises and organizations. Kolkhozes, sovkhoses and other enterprises and organizations are to provide individuals assistance in making that land more productive.

The relevant departments are ordered to submit a proposal concerning amendments and supplements to the Rules on Cutting Hay and Pasturing Livestock in USSR Forests which are now in effect so as to provide for the most complete use of the land of the state forests as hayfields and pastures.

The following new principle has been established: a recommendation has been made that kolkhozes, sovkhoses and other agricultural enterprises make available to kolkhoz members, workers, employees and other individuals who conclude contracts with those farms and also with consumer cooperative organizations for production of products of animal husbandry additional plots of land for raising feed crops both from land around homesteads and also, if necessary, land temporarily not being used by the farms. The farming tax shall not be computed on these plots of land allotted to individuals to raise feed crops. Provision has also been made to exempt from the income tax income which individuals realize from the use of those plots of land.

A recommendation has been issued to kolkhozes, sovkhoses and other agricultural enterprises that they help in every way kolkhoz members, workers, employees and other individuals in raising feed crops on homestead land and additional plots of land made available.

#### Advantages of Cattle Raising Described

Moscow SEL'SKAYA ZHIZN' in Russian 17 Mar 81 p 4

[Text] [Reader's Request for Legal Advice]

"An article in the newspaper SEL'SKAYA ZHIZN' says that as many families as possible are to be provided cows so that every rural family raises livestock and poultry on its farm. Have any benefits been envisaged for rural inhabitants in obtaining cows and other livestock?" asks L. Sizova of Kaluzhskaya Oblast.

[Legal Expert's Answer]

Yes, the decree of the CPSU Central Committee and USSR Council of Ministers entitled "On Additional Measures To Augment Production of Farm Products on the Private Farms of Individuals" establishes more favorable conditions for obtaining livestock.

Kolkhoz members, workers and employees who wish to acquire cows and heifers are to be furnished credit. The new decree permits sovkhoses and other enterprises, with



## AGRO-ECONOMICS AND ORGANIZATION

### INCREASED PRODUCTION FROM PRIVATE PLOTS HELD ESSENTIAL

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 2, Feb 81 pp 3-7

[Article: "In the CC CPSU and the USSR Council of Ministers"]

[Text] The CC CPSU and the USSR Council of Ministers have adopted the decree entitled "Additional Measures for Increasing the Production of Agricultural Products on the Private Plots of Citizens."

In the decree of the Central Committee of the CPSU and the USSR Council of Ministers, it is noted that the party, soviet and agricultural organs, while devoting constant attention to developing the production of agricultural products at kolkhozes and sovkhoses in every possible way, are at the same time carrying out a definite amount of work aimed at increasing the production of such goods on the private plots of kolkhoz members, manual and office workers and other citizens.

However, by no means is full use being made of the opportunities available on the private plots of citizens for increasing the production of meat, milk and other products. The party, soviet and economic organs in a number of oblasts, krays and republics are failing to attach proper importance to the role to be played by the private plots of citizens in supplementing the food resources. In some republics and oblasts, the production of goods on the private plots of citizens is decreasing. The requirements of the kolkhoz members and manual and office workers for young livestock and poultry stock are still not being satisfied fully and many local soviet and agricultural organs are displaying very little concern for ensuring that those citizens who are maintaining livestock on a privately owned basis are provided with haying and pasture tracts, the use of transport facilities and assistance in organizing the grazing of their livestock.

It is noted that the USSR Ministry of the Meat and Dairy Industry, the USSR Ministry of the Food Industry and Tsentsosyuz [USSR Central Union of Consumers' Societies] are only addressing themselves to the problem of developing a network of procurement stations and they are tolerating large shortcomings in the procurement of surplus agricultural products from the population.

It is emphasized that the local party, soviet and agricultural organs, professional trade union organizations and the leaders of sovkhoses and kolkhozes in a number of areas are not furnishing adequate assistance aimed at ensuring that each family in

consent of the trade union committee, to use resources of economic incentive funds to repay up to 50 percent of the credit extended for purchase of cows and heifers to workers and employees who are working conscientiously at those enterprises and also to teachers and physicians who are working and living on the grounds of those enterprises and also to retired persons who worked at those enterprises for a lengthy period of time.

Still greater benefits are afforded to young families. In order to enhance the motivation of young families to create and develop their own farm, sovkhozes and other state agricultural enterprises are allowed to issue young animals gratis to such families at the farm's expense and to help them in building buildings provided members of those families work at these enterprises.

Adoption of this procedure has also been recommended to kolkhozes.

The recommendation has been made to soviet and agricultural agencies, kolkhozes, sovkhozes and other agricultural enterprises that they see to the raising of young livestock and poultry and sell them to individuals in an amount that satisfies the need for them on private farms of individuals, consideration being given to the raising of livestock and poultry under contract with kolkhozes, sovkhozes and other agricultural enterprises and with consumer cooperative organizations.

Provision has also been made to carry out additional measures for further development of rabbit raising on the private farms of individuals; kolkhozes, sovkhozes and other agricultural enterprises are to raise enough pedigreed rabbits to meet the need for them on the private farms of individuals.

Tsentrosoyuz has been ordered to organize the purchase of rabbits and rabbit skins, as a rule right at the place where they are produced.

#### Response to Complaint of Calf Raiser

Minsk SEL'SKAYA GAZETA in Russian 13 Mar 81 p 4

[Text] V. Kolesnikov, secretary of the Osipovich City Committee of the Communist Party of Belorussia, has informed the editors that the letter of I. Bashkevich, who lives in the settlement Grodzyanka, published under the heading "Calves ... In Debt?" in SEL'SKAYA GAZETA on 18 February, was discussed in a general assembly of the Krasnyy Udarnik Kolkhoz.

As a matter of fact, last year the kolkhoz purchased from individuals 428 head of cattle. But because of the difficult financial situation the farm was unable to settle accounts on time with all the suppliers, promising that it would do this in the spring. But it did not inform the suppliers of this, which led to the letter which N. Bashkevich sent to the editors. On 6 February 178 rubles were credited to his account in the savings bank. Notices were sent to the other 35 suppliers requesting them to come to the kolkhoz's bookkeeping department to obtain money for the calves they had delivered.

7045

CSO: 1824/152

the rural areas has a garden, raises livestock and poultry on its own farm and that as many families as possible are able to acquire cows.

The CC CPSU and the USSR Council of Ministers have obligated the local party and soviet organs and the appropriate USSR ministries and departments to eliminate the existing shortcomings in the work of organizing the management of the private plots of citizens, collective horticulture and gardening and the procurements of agricultural products from the population.

We consider it necessary to implement additional measures aimed at improving the conditions under which the private plots are managed by kolkhoz members, manual and office workers and other citizens and raising the interest of the kolkhozes, sovkhoses and other agricultural enterprises and also the organizations of consumer cooperation in making greater use of the potential offered by the private farms of citizens for increasing the production and sale of farming and animal husbandry products.

Sovkhoses and other agricultural enterprises have been authorized, and a recommendation has also been made to allow kolkhozes, to conclude contracts on a strictly voluntary basis with those kolkhoz members, manual and office workers and other citizens who reside on their territories and participate conscientiously in public production, and also with pensioners, for the raising and procurement of livestock and poultry and for the procurement of surplus milk.

USSR Gosbank is obligated to extend long-term credit to the kolkhozes, sovkhoses and other agricultural enterprises, for the maintenance of timely accounts with the kolkhoz members, manual and office workers and other citizens in connection with the livestock and poultry raised on the private farms on a contractual basis.

It has been established that the number of livestock raised on the basis of contracts with kolkhozes, sovkhoses and other agricultural enterprises and also with the organizations of consumer cooperation can be maintained over and above the accepted norms for the maintenance of livestock on a privately owned basis by the family of a kolkhoz member (kolkhoz farmyard), manual workers, office workers and other citizens.

The CC CPSU and the USSR Council of Ministers have been tasked with developing and approving standard contracts for the raising and procurement of livestock and poultry and for the procurement of surplus milk from the private farms of citizens, with these contracts setting forth the obligations of the kolkhozes, sovkhoses and other agricultural enterprises, in connection with furnishing assistance to the kolkhoz members, manual and office workers and other citizens by supplying them with young livestock and poultry stock, grazing and haying lands and other services and also the sales system and the conditions of payment for the products produced.

The cattle, poultry and surplus milk procured by the kolkhozes, sovkhoses and other agricultural enterprises, on the basis of contracts concluded with kolkhoz members, manual and office workers and other citizens, are sold by these farms to the state and they are included by them in their production volume and in fulfillment of the state plan for the procurement of agricultural products, with the established bonuses being paid out in accordance with the quantitative and qualitative indicators.

Agricultural products procured from the population by the organizations of consumer cooperation, at prices agreed upon in the contract, are sold by these organizations in the established manner.

A system will be developed for accounting for the livestock and poultry raised by citizens in accordance with contracts concluded with kolkhozes, sovkhoses and other agricultural enterprises and also for crediting the livestock, poultry and milk procured in accordance with the contracts towards fulfillment of the state plan for the procurement of products by the kolkhozes, sovkhoses and other enterprises.

In the decree of the CC CPSU and the USSR Council of Ministers, the attention of the local party, soviet and economic organs and also the organs of consumer cooperation is directed towards the need, in addition to carrying out measures aimed at increasing the production of animal husbandry products on the private plots of citizens in accordance with contracts concluded with kolkhozes, sovkhoses and other agricultural enterprises, for ensuring an expansion in the procurement activities of consumer cooperation organizations and the development of commission trade in meat and other agricultural products at the kolkhoz markets.

Cattle which are maintained on the private plots of citizens, within the norms established in the Kolkhoz Regulations and existing legislation, are used at the discretion of their owners for satisfying their own requirements, for selling to the organizations of consumer cooperation, in accordance with the prices set forth in the contract, for sale at markets and to state procurement organizations and also for other needs.

The councils of ministers of the union and autonomous republics, kray executive committees, oblast executive committees, rayon executive committees, the USSR Ministry of Agriculture and its organs in the various areas, kolkhozes, sovkhoses and other agricultural enterprises must ensure the raising of young livestock and poultry stock and their sale to the population in amounts which will satisfy the private plot requirements of the citizens, taking into account the raising of livestock and poultry in accordance with contracts concluded with kolkhozes, sovkhoses and other agricultural enterprises and with the organizations of consumer cooperation.

The councils of ministers of the union republics, the appropriate ministries and departments and Tsentrosoyuz are tasked with implementing additional measures aimed at further developing the raising of rabbits on the private plots of citizens and ensuring the raising of pedigree rabbits on the kolkhozes, sovkhoses and other agricultural enterprises, in the amounts required for satisfying the requirements for them on the private plots of citizens. The procurement of rabbits and rabbit pelts should be organized as a rule directly at the sites where they are produced.

The councils of ministers of union and autonomous republics, kray executive committees, oblast executive committees, rayon executive committees, the USSR Ministry of Agriculture and its organs in the various areas and the leaders of kolkhozes, sovkhoses and other agricultural enterprises are obligated to carry out additional measures directed towards improving the supplying of feed for livestock and poultry being maintained on the private plots of citizens; to provide those kolkhoz members, manual and office workers and other citizens who conscientiously



participate in public production, and also pensioners, and who maintain long-horned cattle sheep and goats on their private plots, with tracts of land for haying purposes and for the grazing of their livestock for as long a period as possible. Towards this end, use must be made in the established manner of the agricultural lands of kolkhoses and sovkholes, land of the state reserves and state forest resources and the land of industrial, transport and other non-agricultural enterprises and organizations. The kolkhoses, sovkholes and other enterprises and organizations must furnish assistance to the citizens in raising the productivity of these lands.

The appropriate ministries and departments and also the councils of ministers of the union republics are tasked with preparing and introducing for approval in the established manner, proposals for changes and supplements to the rules for haying and the grazing of livestock in the forests of the USSR, thus making more complete use of the lands of the state forest resources for haying and grazing purposes.

The recommendation has been made to have the kolkhoses, sovkholes and other agricultural enterprises provide those kolхоз members, manual and office workers and other citizens, who have concluded contracts for the production of animal husbandry products with these farms and also with the organizations of consumer cooperation, with additional tracts of land for the cultivation of forage crops, using both private lands and, when necessary, land which temporarily is not being used by the farms.

The proposal has been made to have the kolkhoses, sovkholes and other agricultural enterprises furnish maximum assistance to the kolхоз members, manual and office workers and other citizens in the cultivation of forage crops on their private plots and on the additionally allocated tracts of land.

The decree of the CC CPSU and the USSR Council of Ministers calls for measures aimed at creating more favorable conditions for acquiring livestock. The sovkholes and other enterprises, by agreement with the professional trade union committee, are authorized to liquidate up to 50 percent of the credit extended, for the acquisition of cows and young bulls, to manual and office workers who perform their tasks in a conscientious manner, to teachers and doctors who have worked and resided on the territories of these enterprises and to pensioners who have worked for an extended period of time on these territories, with use being made of the economic incentives fund for this purpose.

In order to raise the interest of young families in creating and developing private plots, the sovkholes and other state agricultural enterprises are authorized to provide them with young stock free of charge, at the expense of the farm, and to furnish assistance in the construction of farm outbuildings upon the condition that the members of these families work at the enterprises involved. It has also been recommended that the kolkhoses employ this same method.

Tsentrosoyuz and the councils of ministers of the union republics must ensure further improvements in the work of the consumer cooperation organizations, with regard to the procurement of animal husbandry and farming products from the private farms of citizens. The plans call for additional measures aimed at strengthening the logistical base for the procurement-acceptance stations of consumer cooperation,

the construction, modernization and expansion of enterprises engaged in the processing and storage of agricultural products procured and for ensuring that they are supplied with the required equipment, packaging and other resources.

The proposal has been made to have the local soviet organs provide the organizations of consumer cooperation with facilities for carrying out cooperative trade and with the assistance required for making transport equipment available for transporting the agricultural products. In addition, the local soviet organs are to expand and strengthen the logistical base of the kolkhoz markets so as to create the conditions required by the citizens for selling their surplus agricultural products.

The ministries and departments and also the councils of ministers of the union republics must develop additional measures aimed at increasing the production and sale to the population of orchard and gardening implements, packaging and wrapping materials and equipment for light mechanization. The organizations of USSR Goskomsel'khontekhnika are tasked with carrying out repair and technical servicing work on light mechanization equipment belonging to citizens and used for carrying out agricultural work.

USSR Gosbank is authorized to extend credit to the kolkhozes, sovkhozes and other agricultural enterprises for issuing monetary advances to kolkhoz members and manual and office workers, required for procuring the implements, materials and light mechanization equipment for agricultural work as needed for the production of agricultural products, in conformity with the contracts concluded, with the amount of credit ranging up to 50 percent of the total amount specified in the contract.

The councils of ministers of union and autonomous republics and the executive committees of local soviets of workers' deputies, in addition to the earlier established system, are tasked with ensuring that the enterprises, organizations and institutes for collective horticulture and gardening are presented with tracts of land from the state forest resources that are not covered by timber or occupied by low-value forest plantings and which are located in the green and suburban zones of cities and other populated points, taking into account the prospects for expansion of their territories.

We consider it advisable to present the enterprises, organizations, institutes and citizens, for temporary use, with tracts of land from the unused lands of industrial, transport and other non-agricultural enterprises and organizations, and within the limits of cities and other populated points, for the cultivation of potatoes and vegetable crops on these tracts. The allocation of such tracts of land to enterprises, organizations, institutes and citizens should be carried out in the established manner and for periods during which these tracts will not be employed for their principal purpose.

The councils of ministers of the union republics must undertake additional measures aimed at increasing the sale to the rural population and to amateur gardeners of bricks, timber, crushed stone, gravel, sand and other local construction materials; the appropriate planning organizations must be tasked with composing (preparing) the plans for organizations on the territories of collective orchards, in accordance with the contracts concluded with the administrations of horticultural associations, both on the basis of requests by the administration and professional

trade union committees of the enterprises, institutes and organizations to whom the land tracts were presented in the established manner and also based upon decisions handed down by the rayon and municipal soviets of peoples' deputies.

The ministries, departments and councils of ministers of union republics are authorized, in the plans for enterprises, to call for construction, land reclamation, highway and repair work and also work associated with electrification and supplying water for the gardening tracts, in accordance with contracts concluded with the horticultural associations. The production of precast gardening buildings for the horticultural associations must be increased.

The ministry for the production of mineral fertilizers, Tsentrsoyuz and the USSR Ministry of Trade are obligated to increase the production of mineral fertilizers and toxic chemicals in packaged form, for sale to the population at times and in the variety and quantities which will satisfy the private plot requirements of kolkhoz members, manual and office workers and also amateur gardeners.

USSR Gosbank is authorized to extend, commencing in 1981, to manual and office workers and to members of horticultural associations, credit for acquiring or constructing gardening buildings and for establishing good order on the gardening tracts, in an amount up to 3,000 rubles and with repayment over a period of 10 years, commencing with the 3d year following the one in which the credit was issued.

The councils of ministers of the union republics are tasked with determining, based upon local peculiarities and the population's potential for managing the private plots, the maximum size of the areas and the nomenclature for the farm buildings alongside the dwellings.

The councils of ministers of union and autonomous republics, executive committees and the kray, oblast, rayon and municipal soviets of peoples' deputies are authorized to permit the construction, on a cooperative basis in the populated points, of animal husbandry facilities for the maintenance of livestock that are privately owned by citizens.

The USSR Ministry of Agriculture and its organs in the various areas are tasked as follows: coordinating the work of organizing the management of private plots by citizens, collective horticulture and gardening and rendering agronomic, zooveterinary and other types of assistance to these farms; exercising control over the phytosanitary condition of the private plots of citizens and the collective orchards and gardens and also carrying out measures, by agreement with the citizens, aimed at combating plant pests and diseases on these plots and in the orchards.

The councils of ministers of the union republics and USSR Goskomsel'khoshtekhnika are tasked with solving the problem of creating, within the system of domestic services ministries and Goskomsel'khoshtekhnika enterprises in the union republics, rental stations for agricultural implements and the equipment required for furnishing assistance to the kolkhoz members, manual and office workers and other citizens in servicing the private plots and collective orchards and gardens.

The Central Committee of the CPSU and the USSR Council of Ministers have tasked the central committees of the communist parties of union republics, kray committees,

oblast committees, municipal committees and rayon party committees, the councils of ministers of union and autonomous republics, the kray executive committees, oblast executive committees, the executive committees of rayon, municipal, rural and settlement soviets of peoples' deputies and the professional trade union and komsomol organizations with carrying out the required organizational and explanatory work among the population and acquainting the kolkhoz members, manual and office workers and other citizens with the measures called for in the present decree with regard to increasing the production of agricultural products on the private plots of the population.

Importance is attached to creating a social climate in all areas in which all kolkhoz members, manual and office workers and other citizens would feel that they are performing useful state work by raising livestock and poultry and carrying out gardening and orchard work on their private plots.

COPYRIGHT: Izdatel'stvo "Kolos", "Ekonomika Sel'skogo Khozyaystva", 1981

7026

CSO: 1824/140



## AGRO-ECONOMICS AND ORGANIZATION

### READERS NOTE PROBLEMS CONNECTED WITH PRIVATE PLOTS

#### Review of Letters

Minsk SEL'SKAYA GAZETA in Russian 20 Feb 81 p 4

[Article by Marat Khonyak: "Behind the Tractor... On a Rope"]

[Text] The Editorial Board's mail is a very sensitive barometer. There is no event occurring in life that is not covered in the letters from our readers. Thus it was only natural for the decree of the CC CPSU and the USSR Council of Ministers entitled "Additional Measures for Increasing the Production of Agricultural Products on the Private Plots of Citizens," which was published in the newspapers, to bring about a new flow of letters from the rural areas: expressing gratitude, interest, intelligence and a business-like attitude. What is required -- is clear to all. The authors of the letters hold a discussion on how best to increase the production of agricultural products on the private plots.

We will not close our eyes to the difficulties: it is not a simple problem. And only its smallest part can be solved by so-called free hands in the rural areas, that is, with the aid of pensioners, teen-agers and women not engaged in production. The principal reliance is placed upon those who (as is the case at the present time) devote their free time to their private plots after the day's work has been completed at the kolkhozes, sovkhozes or various organizations. And since work on a private plot provides more benefit and satisfaction and is easier to carry out, then more and more frequently we are hearing an important word being uttered -- mechanization. In an extremely broad sense -- from a single-bottom plow to an orchard and gardening tractor.

A scene viewed on one occasion during a temporary duty trip is recalled in this regard. A Belarus' tractor was "harnessed" to a horse-drawn plow by means of a long rope. The machine was moving over a tract that had not been planted and the plowman was turning with the plow between bushes and trees. This scene flashed across the motor bus windshield and later I pondered one thought for a long period of time: well, fine, it covered one furrow, but what about going further? If the plow and the rope are pulled to the other end of the farmstead, then the tractor together with the plow will encircle the planting...

And what about a private plot? It happens that a horse may be available but no yoke. Or a plow. Or something else. Certainly, a sovkhov or kolkhoz economy is

not dependent on such minor concerns. But, in any case, it is impossible to manage a rural farmyard without them. And so the people decide to buy a plow, as was the case with A. Yaroshem and M. Bobko at the Krasnyy Partizan Kolkhoz in Klatskiy Rayon. But there were no plows for sale. And the correspondence began.

In a long and drawn out reply by the deputy chairman of the Minskaya Oblast Executive Committee N. Tavirko, it was stated that in December, in the village of Meshnaya Sloboda, additional horse drawn plows were made available for satisfying the requirements of the public and private farms. But another type of information was also contained in the reply: it turns out that it is not possible to sell a plow for private use through the trade network; this is not provided for by the mandatory assortment list. And further: "For the working of private plots, the citizens are to use the tractive force and appropriate implements of the kolkhozes and sovkhoses on whose territory they reside."

But here is what U. Bavrina, a former agronomist and now a pensioner in Starodorozhskiy Rayon in this same Minskaya Oblast, wrote: "The principal assistant on a private plot is still a horse. The working of the soil, tending of the crops, transporting of fertilizers, procurement of feed -- all work carried out by a horse. Our terrain is wooded, how many grass-plots remain unmowed, indeed we cannot carry the hay on our shoulders. It cannot be said that the Starodorozhskiy Sovkhoz does not maintain horses, but they are neglected and do not justify their existence owing to a shortage of harnesses and implements. An extreme need exists for ensuring that each farm has draught animals, harnesses and implements for work on the private plots and for a moderate payment. This is a matter of national importance."

Similar concern was expressed by a war veteran at the Sergeyevichi Sovkhoz in Pukhovichskiy Rayon, N. Khodyki. "Each newspaper prints announcements on the surplus potatoes we sold to the state" he wrote, "And what do we have to plow the land with? One can't find a horse-drawn plow anywhere. I had a small plow, but it has been unsuitable for use for many years and there is too much digging for a shovel."

There have been even more complicated situations. And all because of failure to supply the farms with the agricultural implements that are badly needed on the private plots. V. Koriashchov in the village of Zakruch'ye in Vetkovskiy Rayon lives a great distance from a horse corral. It is his misfortune: he goes to a stable and notes that a few horses are still available, but there are no carts left. Vasil'y Vasil'yevich adds that if he were to rise at daylight or dawn, he would be able to obtain a cart. But in any case somebody would be left without one, perhaps a widow.

And so he resolved to acquire his own cart. And so he did. But the kolkhoz administration issued an order: "Turn in the wheels or you will be fined!"

The confused Vasil'y Vasil'yevich asked the Editorial Board what he should do now.

In reaching a final decision at a site, it is obviously necessary to take into account the fact that there is no legal document that holds that a kolkhoz member cannot have a cart for his own private use. A thought might occur to some concerning connivance with private ownership instincts. However, the best means for combating them -- is the availability at the kolkhozes and sovkhoses of adequate

quantities of carts, plows and other implements. But, frankly speaking, the problem appears to be far-fetched. Indeed a motorcycle with a side-car can carry away just as much as any cart. Nobody objects to a kolkhoz member having a motorcycle in his yard and yet an objection is posed with regard to a cart.

However, life imposes even more complicated tasks upon us. This is fully natural, since time moves on and in today's rural areas they are able not only to engrave spoons but also to weave doormats.

In the village of Ozershechina in Rechitskiy Rayon, V. Kuznetsov assumes quite properly that "only a loafer with a calm conscience can go to a city for food products that he is capable of producing himself." However, the days move along and time is required for spiritual needs and study. There is one solution -- obtain a motor as an assistant. The idea has already been taken from the journal *TEKHNIKA - MOLODEZHI* [Engineering and Youth] and thus a miniature tractor was assembled which can plow, harrow, hill-up potatoes and cut grass.

It would seem that everything is fine. This is true but for the fact that V. Kuznetsov can only operate his tractor in his own yard. When it is necessary for him to go out onto the land tract allocated to him by the SPTU [Agricultural Professional-Technical Institute] where he works or to a meadow in order to cut down hay, he is brought to a decisive halt by the militia.

Certainly, the motor vehicle inspectorate has its iron-clad rules and nobody is allowed to violate them, since the issue here is safety of movement and human lives. No indulgences can be tolerated.

But what then is the answer for technical creativity generally? Is there really no solution for rural enthusiasts who individually attempt to do that which the USSR Ministry of Tractor and Agricultural Machine Building is still unable to accomplish? Perhaps the possibility nevertheless exists of "legalizing" the miniature tractor assembled by V. Kuznetsov. And not just for him.

#### No Profit in Calf Raising

Minsk SEL'SKAYA GAZETA in Russian 18 Feb 81 p 2

[Article by I. Vashkevich, resident of Grodzyanka Settlement in Osipovichskiy Rayon: 'Calves... In Debt?']

[Text] In conformity with the decree by the party and government on the development of private plots, we are raising calves and supplying them to the kolkhoz. But what is happening? We must beseech the farm in order to obtain our money. For example, many residents of the settlement, including myself, delivered calves to the Krasnyy Udarnik Kolkhoz in Osipovichskiy Rayon in May of last year. And they still have not settled accounts with us.

The deputies of the settlement council have requested that the residents be paid for their calves. We are truly offended that, following our labor, we must beg and bow and scrape. We placed a call to the Osipovich City Committee of the Communist Party of Belorussia. There they promised to investigate the situation. However, as yet there have been no changes.

## AGRO-ECONOMICS AND ORGANIZATION

### SHORTCOMINGS OF GRAIN PROCUREMENT OPERATIONS DESCRIBED

Moscow SEL'SKAYA ZHIZN' in Russian 19 Feb 81 p 2

[Article by V. Aniskin and L. Kropp, candidates of technical sciences, Moscow: "Grain Department of the Country"]

[Text] The task of further increasing the production of grain and feed and achieving a sharp reduction in their losses, as emphasized in the plan for the Basic Directions, is one of the most important tasks for the new five-year plan. Among the principal conditions for fulfilling this task -- the introduction of industrial methods which will make it possible to harvest the entire crop on a timely basis, preserve it completely and process it in a high quality manner. However, the level of development at the kolkhozes and sovkhoses of the network of grain and feed processing stations and shops is inadequate. At the present time, this network is equipped with cleaning and drying flow lines to a level of only 40-45 percent, feed processing lines -- 25-30 percent and with standard storehouses which meet the minimal modern requirements -- 50 percent.

The gap that has developed between the rates for harvesting the increasing yields on the one hand and the limited opportunities of the farms to process the crops on a flow line basis and to place them in storage under conditions which preclude spoilage on the other, is increasing. The flow line capabilities of the kolkhozes and sovkhoses are inferior by a factor of 5-6 to the productivity of the combine fleet. And the deficit in capacities leads to a situation wherein, even with temporary storage at open sites, a considerable quantity of grain is lost.

The farms sustain considerable losses and, when selling grain to the state, are unable to improve it to the standard conditions for moisture content and weediness. The experience of leading kolkhozes and sovkhoses has shown that the amount of money, equivalent to 2-3 annual underpayments, which some farms are not receiving owing to the low quality of the grain sold by them, is sufficient for building a modern grain station.

The task of combating crop losses is no less important than that of increasing the production of those crops. Indeed, an increase in resources as a result of having reduced grain losses costs 30 percent less than if that same increase had been grown.

The problem of creating a modern logistical base for the processing and storage of grain at the kolkhozes and sovkhoses is becoming more acute and particularly in



connection with the increase that has taken place in that portion of a crop which remains on the farms for feed, seed and other purposes. In the not too distant future, 85-90 percent of the harvest will have to be processed directly in agriculture. Moreover, the task will be assigned of processing all of the grain forage, including feed waste products, into mixed feed at interenterprise and kolkhoz-sovkhoz mixed feed enterprises. But this requires a considerable acceleration in the erection of grain stations and grain storehouses on the farms.

Thus, it would be advisable to add a fifth section to the plan for the Basic Directions, in the form of the following statute: "To consider the most important task to be the development and implementation of technical improvements, at kolkhozes and sovkhozes, in the network of mechanized grain stations having storehouses, with the purpose of this network being to ensure the timely acceptance, processing and reliable storage of grain, regardless of the conditions under which it is received. First of all, to eliminate the deficit that has developed in granary capacities, erecting for this purpose metal storehouses of industrial manufacture in addition to the traditional reinforced concrete storehouses."

The creation of a modern technical base for the storage and processing of grain is of great importance not only for better preserving that portion of a crop left on a farm, but also in conformity with the state procurements of grain.

In a number of countries, including in the U.S.A., priority development has been assigned to a network of farm grain stations. It is used for the extended storage of a large portion of a crop which, following processing, is shipped to local elevators, which are similar in function to our procurement points. We are of the opinion that our system of procurements includes an obsolete arrangement, according to which even the temporary storage of quality-standardized commodity grain is not allowed on the farms.

Thus the rhythm of the procurement operations is constantly subordinated to the increasing rhythm of the harvest work. In the future, the task will be assigned of completing the latter work in 5-7 days. At the present time and in addition to local motor transport vehicles, up to 300,000-350,000 motor vehicles mobilized from other branches of the national economy are engaged in transporting the grain to the grain receiving enterprises. The repeated shifting of motor vehicles from west to east as the crop ripens is very costly to the state. Nevertheless, there is still a shortage of transport vehicles.

It is recognized that the summer months are more favorable for the transporting of grain. But is it necessary for this to be done in an atmosphere of extreme tension over a period of 15-30 days? The harvest campaign is seasonal in nature and an acceleration in the harvest work is dictated by the desire to gather in the grain during the period of its highest biological value. But is it necessary to deliver the grain to the procurement points on such a rapid basis?

Analysis has revealed that if there is a reliable technical base available at the kolkhozes and sovkhozes, especially in the remote zones, it could be considerably more effective to process the delivered grain to marketable condition at local grain stations and to hold it in temporary storage there. It can subsequently be delivered to the grain receiving enterprises during the post-harvest period, at

which time there should be no problem in obtaining transport vehicles. In such instances, the waste products from the processing of commodity grain can be utilized completely for feed. Accordingly, a reduction will take place in the required capacities of the grain receiving enterprises, owing to an increase in their turnover as a result of the grain being received from the farms over a period of 4-5 months rather than within 15-30 days.

Such stations can be either local or interenterprise and their capacity, depending upon the grain production density -- on the order of 10,000-25,000 tons.

In the plan for the Basic Directions, a great amount of attention is given to those problems concerned with improving the organization of procurements of agricultural products. But we nevertheless consider it advisable to amplify the appropriate paragraph with the following statute: "To create conditions for accepting grain that has been processed to the proper condition at the kolkhozes and sovkhozes and mainly in the remote grain regions. To optimize the periods for storing and transporting the grain, in the interest of eliminating transport overloads and combine idle time and ensuring the preservation of the entire gross yield of grain."

When such an approach is employed, in addition to harvesting the crop more fully and more cleanly and preserving it better, it will also be possible to increase considerably the delivery capacity of the procurement enterprises. The grain receiving capacities already available are sufficient for considerably greater procurement volumes, which will grow as the harvests increase. In order to realize this reserve in a sound and effective manner, it will be necessary to improve the interaction between the agricultural and procurement grain processing systems. Unfortunately, the enterprises of these related branches often develop in an isolated manner, with no thought being given to the inter-departmental contacts. This leads to a situation wherein the technological processes at the procurement and kolkhoz-sovkhoz points often duplicate one another.

Although the programs of both branches are fully comparable in terms of volumes and importance, the requirements of agriculture are being satisfied to a considerably lesser degree and the plans for developing the branches are being prepared almost separately, on the basis of departmental criteria. The food program formulated in the plan for Basic Directions is directed towards overcoming such shortcomings. By way of defining its statutes more specifically, in conformity with the grain problem, it is deemed advisable to call for the following measures in Section 5: "The construction of procurement enterprises and kolkhoz-sovkhoz grain stations in accordance with a single inter-branch plan, the development of which must take into account their transport-technological and organizational-economic links, achieve more thrifty utilization of resources through the development of a network of grain stations with storehouses on the farms and increasing the turnover of the capacities of the grain receiving enterprises."

## AGRICULTURAL MACHINERY AND EQUIPMENT

### OFFICIALS DISCUSS PLANS FOR INTRODUCING MODERN MACHINERY

Moscow SEL'SKAYA ZHIZN' in Russian 4 Feb 81 p 2

[Article by V. Bykadorov: "New Equipment for the Fields: Remarks from the All-Union Conference of Tractor and Agricultural Machinebuilding Designers and Engineers"]

[Text] At the All-Union Conference of Tractor and Agricultural Machinebuilding Designers and Engineers, they discussed ways to improve building and issuing new equipment for the countryside at enterprises of the branch. In opening the conference, Comrade Minister A. A. Yezhevskiy noted that during the 11th Five-Year Plan important and complex tasks faced those creating the new equipment. They are clearly defined in the Basic Goals draft: to create designs and begin producing a powerful cultivator tractor and a highly productive grain harvesting combine which adhere to modern requirements of all technical and economic indicators; to expand the capacity and organize the manufacture of highly productive machines for introducing industrial technology into agriculture.

In the course of the five-year plan, machine builders must supply agriculture with 1,870,000 tractors, 600,000 grain harvesting machines, and a great deal of other equipment. Their tasks are complicated by the fact that a significant number of the series production machines are obsolete and are subject to being removed from production or are in need of modernization. In connection with this, it is advisable to improve the role and responsibility of scientific and research institutes and design offices in creating and implementing the production of new machines. Working documents must be preceded by initiative, a creative search, repeated calculations on a draft level and mathematical modeling. Designers must anticipate what machine will be required by the growing level of agricultural technology in 10-20 years and what kind of material and equipment will be necessary for creating them.

At the conference they underscored the fact that under present conditions extended periods of time for developing and mastering new machines are simply intolerable. Now design shortcomings which have been discovered during state testing at machine-testing stations of the USSR Goskomsel 'khoztekhnika [State Committee for Supply of Production Equipment for Agriculture], at times are not eliminated and are repeated in models presented for repeated testing. Thus, the development of the T-330 tractor has been going on for over 14 years and of the T-70D tractor, it has been going on for over 8 years. For over ten years they have been developing the double-level 3-4 section plow, a wide-cut horticulture assembly unit and a disker. There was overspending for these and many other machines, while the agricultural industry never received the necessary equipment.



The speakers noted that in order to have normal and timely preparation for production of new machines, the stock of prepared design plans is very important. A good example of this is the Krasnoyarskoye production association. The plant's design office which is headed by V. P. Gazrilov has successfully completed the plan for a modernized grain harvesting combine called SKD-6 Sibiryak which has the capability to produce 6.3 kilograms of grain per second. Now the collective of the plant is preparing a gift for the 26th CPSU Congress--100 new combines. By the end of the year over 14,000 of them will be issued.

The first stage for modernizing the "Niva" is coming to an end. It is intended that by 1985 at the Taganrogskiy Plant a rotor type of combine be produced with a capacity for threshing 10-12 kilograms of grain per second. The new combines will be supplied with hydraulic equipment and tools for automatic control over threshing procedures, a larger bin and a more powerful engine, an improved transmission as well as a comfortable cabin. The powerful plowing tractors which were developed at the Minsk and Lipetskiy plants will be equipped in accordance with modern requirements. Kolkhozes and sovkhoses will receive them this year.

Designers and machine builders will have to carry out measures on reducing the expenditure of fuel, reducing the amount of oil waste to .5-.6 percent of the amount of fuel used. The problem of producing durable piston rings has now theoretically been resolved. Therefore, increasing the engine's resource to 8,000-10,000 hours has not only become necessary, but also possible.

The issues concerning creating and producing a full set of agricultural machinery for powerful cultivated tractors are still pressing. Work is being done towards this. The Tselinogradskiy state special design office for anti-erosion equipment, for example, created a set of equipment for the T-150K and K-701 tractors. This is the wide-cut KPSH-9 cultivator tractor, the OPT-3-5 sub-surface cultivator, and the KPG-2.2 deep digger fertilizer. However, many of the design offices for agricultural machinery still owe a great deal to the farm workers.

In this branch they are developing complex special purpose programs for improving the technical level and quality of the machines. They plan to put into operation over 40 new pieces of equipment and they are assuring that this equipment fulfills modern requirements placed on design and technology. That is, the point is not simply to improve the design and technological services, but it is the fundamental reorganization of their work in view of the resolutions of the October (1980) Plenum of the CPSU Central Committee and the main points of the Basic Goals draft.

A cardinal reequipping of production has been planned. At the branch enterprises they will have to implement the experience of progressive native motor vehicle and machine building plants. At the plants of the branch in the near future they intend to put into operation 1,146 automatic and conveyor-belt lines, improve the level of the use of mechanical devices in welding work to 87.5 percent, and to carry out other measures.

At the conference they defined definite measures directed at the further increase in the productivity, reliability and the lasting nature of the agricultural equipment produced.

Chief of the department of agricultural machinebuilding of the CPSU Central Committee I. I. Sakhnyuk and responsible workers of the CPSU Central Committee, USSR Council of Ministers, USSR Gosplan, USSR Gosstab, and USSR State Committee on Science and Equipment and ministries and branches participated in the work of the conference.



## AGRICULTURAL MACHINERY AND EQUIPMENT

### NEW INDUSTRIAL TECHNOLOGY SUBJECT OF ALL-UNION CONFERENCE

Moscow SEL'SKAYA ZHIZN' in Russian 18 Feb 81 p 2

[Article by N. Marfin, Moldavian SSR: "For the Fields -- An Industrial Technology"]

[Text] During the Tenth Five-Year Plan, the logistical base for agriculture was strengthened considerably owing to the consistent implementation of the party's agrarian policies. This brought about increases in the production of farming and animal husbandry products. For the very first time, the average annual gross yield of grain exceeded 200 million tons. But the task for more completely satisfying the country's requirements for food products and agricultural raw materials requires further improvements in the rates of growth for production. During the new five-year period, the average annual yield of grain must be raised to 238-243 million tons. A decisive condition for the dynamic development of each branch of agricultural production is that of converting it over to an industrial base and to progressive technologies.

An all-union conference-seminar held in Kishinev was devoted to examining the specific problems associated with the mass introduction, during the current five-year plan, of an industrial technology for the growing of corn, sunflowers, soybeans and other agricultural crops. Representatives of party, soviet and agricultural organs from all of the union republics, eminent specialists, leading production workers and scientists from all over the country participated in the work of this conference.

In the principal speech delivered by the Deputy Minister of Agriculture for the USSR A.A. Gol'tsov, in the reports by leaders of scientific-research institutes and in the statements made by practical workers in the various areas, many examples were cited which served to emphasize the efficiency of the new technologies. They guarantee that high and stable yields will be obtained with minimal expenditures of labor and resources.

In 1980, industrial technologies were employed throughout the country for the cultivation of 1.15 million hectares of corn, 626,000 hectares of sunflowers and 222,000 hectares of soybeans. The state allocated additional logistical resources for this purpose -- seed, fertilizers, herbicides and agricultural equipment. At kolkhozes and sovkhoses of interenterprise associations, 68,000 machine operators and more than 6,000 specialists attached to the agronomical and engineering services underwent retraining. Compared to the conventional technologies, the "industrialized"

corn fields furnished an increase of almost 13 quintals. Approximately 1.11 million additional tons of grain were obtained. In the zones in which the new technology was employed, 34 percent of the plantings were for grain corn and these plantings produced more than one half of the gross yield of the golden ears.

The most substantial increase was obtained in the Kazakh SSR -- 34.5 quintals per hectare, against an overall and comparatively high cropping power level of 75.5 quintals. Especially fine work was performed here by the corn growers in Taldy-Kurganskaya Oblast; they obtained 81 quintals of grain from each of 12,000 hectares.

Fine results are being achieved in those areas where, from the very beginning, a genuine party and creative approach was manifested towards the new work. The speeches delivered by the chairman of the Kolkhoz Council of the Moldavian SSR V.A. Ryabchich and the leader of Mechanized Detachment No. 11 of the Valyaperzhskiy crop rotation plan of the Chadyr-Lunga Kolkhoz Council, Hero of Socialist Labor and delegate to the 26th CPSU Congress S.M. Parmakli were very instructive in this regard.

Saveliy Parmakli -- the initiator of a new and progressive technology for the cultivation of corn. From the very first days, his plantations were transformed into a "hot spot" -- all of the republic's machine operators came here to study and sharpen their expertise. Approximately 500 specialized detachments and teams were formed in the Moldavian SSR. Upon being supplied with power equipment and a basic set of machines, the mechanized detachments, using their own resources, produced 1,000 additional units and devices -- land levellers, hitches for the dual ganging of SPCh-6 sowing machines, multi-purpose units for the simultaneous application and placement of herbicides and others. The specialists inspected the fields in all areas and, taking into account their fertility, composed technological charts and cartograms for the use of fertilizers, herbicides and other chemicalization means. A new wage system and measures for issuing moral and material incentives were developed. And here is the result: in 1979, the republic's corn growers obtained almost 50 quintals of grain from each of 100,000 hectares cultivated using the industrial technology and in 1980, notwithstanding the unfavorable weather conditions, 45 quintals per hectare were obtained from the entire area of commodity plantings. With the conversion over to the industrial technology, the cropping power of the corn increased by 37 percent, with labor expenditures per unit of output decreasing by almost twofold. In 1980, the economic savings realized from the introduction of the industrial technology amounted to 75 million rubles.

The party and agricultural organs in Odesskaya Oblast of the Georgian SSR provide an example of purposeful action and active mobilization of internal resources in behalf of the introduction of industrial technologies into operations. And here a noticeable increase also took place in the cropping power of the corn.

Unfortunately, the increases expected from the new technologies are still not being obtained in many rayons throughout the country. This applies first of all to a number of oblasts in the Russian Federation and the Ukraine. In Voronezhskaya Oblast, for example, only 10 quintals of grain corn per hectare were obtained last year. Whereas in 1979, throughout the country as a whole, the "industrial" plantings of grain corn yielded 23.8 more quintals than that obtained from conventional plantings, in 1980 this increase was cut almost in half. The yields

obtained from soybeans and sunflowers cultivated using an industrial technology were not very high. Certainly, these results were affected to a certain degree by the complicated weather conditions. However, the principal reasons for the low return, as emphasized during the conference-seminar, derived from unsatisfactory executive and technological discipline. In Voronezhskaya Oblast, the sowing work was begun with neither the personnel nor the equipment being made ready for it. In Poltavskaya, Nikolayevskaya and Belgorodskaya Oblasts, the wrong predecessor crops were selected for the grain corn and, as a result, the plantings became excessively weedy. The new technology, as is well known, requires high fertilizer dosages and on farms in the Dagestanskaya and Checheno-Ingushskaya ASSR's, only 5-6 quintals of mineral fertilizer were applied per hectare of soil instead of 10 quintals.

Many farms are tolerating such violations of the agricultural practices and technological discipline as delayed sowing schedules, overcrowded plantings and poor utilization of herbicides. In addition, the specialized training was weak and in some areas a serious attitude was not being displayed towards the work. The secretary of the Krymskaya Oblast Party Committee, V.I. Il'in, noted quite accurately that in addition to weeds the corn and soybeans also had one other enemy -- indifference and lack of initiative on the part of certain specialists.

The participants in the conference addressed serious complaints against the workers in the chemical industry and Goskomsel'khoztekhnika, who quite often do not supply the fertilizers and machines on a timely basis. The workers at plant breeding centers are under an obligation to the farmers for having failed to supply the latter with adequate quantities of highly productive varieties and hybrids for early ripening corn, that are well adapted to the new technologies. Sunflower varieties which were regionalized in many areas 30-40 years ago are not resistant to damage by white and grey rot. The soybean seed leaves a great deal to be desired.

An especially prolonged discussion was held during the conference on the logistical base and on the quality of the equipment. The majority of the machines being employed with the new technologies -- soil levellers, disk and spring-tooth harrows and sowing machines -- require increased speeds. However, tractors of this type are still not available in sufficient numbers. Moreover, they are wheeled types and thus during the spring they pack down the soil to an excessive degree, leaving deep tracks behind them.

Many of the speakers discussed the need for improving the harvesting equipment. For example, the farmers have long awaited the arrival of a self-propelled machine for harvesting corn. The industry is producing the Khersonets-200 combine. Experience has shown that it is best used in a variant with the threshing of the ears. However, it comes mainly with interrupted rollers. The speakers maintained that such a machine is best used in three variants: with threshing, separation of the ears and an attachment for harvesting the corn for silage.

The chief of the Technical Administration for USSR Minsel'khozmasht [Ministry of Tractor and Agricultural Machine Building] I.P. Ksenovich reported that the machine builders, taking into account the sharp criticism which they were subjected to during the October (1980) Plenum of the CC CPSU, are presently engaged in

creating a complex of more improved machines and units for an industrial technology to be used in the cultivation of agricultural crops.

In connection with further increasing the gross yields of grain, as the foundation for the food program, an important role must be played by corn. No less than 15 million tons must be produced during this current year and in the future the yields must be increased to 23-25 million tons. During the current five-year plan, the yields of oil-bearing sunflower seed must be raised to 7 million tons, including no less than 6.4 million tons in 1981. Soybean production must be increased to 2 million tons, including more than 1 million tons during the current year. Thus the production of these crops must be practically doubled. This requires increased organizational work in connection with mastering the new technologies, which during the five-year period must be introduced on the entire area of plantings given to corn, soybeans and sunflowers.

The all-union conference-seminar, after summarizing the accumulated experience, outlined specific measures aimed at achieving fine yields in all areas during the first year of the Eleventh Five-Year Plan and realizing a maximum return from each hectare of agricultural crop planting converted over to the new progressive technologies.

7026

CSO: 1824



## TILLING AND CROPPING TECHNOLOGY

### IMPORTANCE OF FERTILIZER FOR INCREASED CROP YIELD STRESSED

Moscow SEL'SKAYA ZHIZN' in Russian 4 Feb 81 p 2

[Article by V. Pannikov, academician of the All-Union Academy of Agricultural Sciences imeni V.I. Lenin; V. Mineyev, corresponding member of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin: "The Chief Concern of Farmers"]

[Text] The chief task for modern farming is to increase soil productivity and ensure the uninterrupted growth in harvest yields. Therefore, the work on each farm must be evaluated not only on the basis of the quantity and quality of its agricultural output, but also, in view of this, how the increase in soil productivity and environmental protection are ensured.

As we know, one of the fundamental indicators for soil productivity is the organic substance of humus which it contains. Science and experience have proven that prolonged systematic use of mineral fertilizers, particularly in crop rotation without perennial grasses, as a rule, does not ensure the preservation of humus reserves in the soil. Although humus depletion is partly compensated by the humification of the roots and afterharvests, the process of depleting the soil of humus is unavoidable. Only the use of organic fertilizers can stabilize the humus content in the soil and large doses of them can provide for its increase.

Therefore we find it fitting that in the Basic Goal draft we should give this version of the main points on using mineral fertilizers: "Provide for a more complete and efficient utilization of all types of mineral fertilizers as an important factor in increasing soil and field productivity." This is important in connection with the fact that there are frequent incidents where this important means for increasing harvest and quality of plant output is not valued enough.

At the same time it is essential to bear in mind that both organic and mineral fertilizers and trace elements have the greatest effect only when they are properly combined and applied together. Moreover, the relationship of forms of nitrogen, phosphorus, potassium and other nutritional elements in them which are accessible to the plants must be determined in view of the soil and climatic features of the nation's farming areas and the data gathered from agro-chemical surveys on each farm.

Supplying the soil with phosphorus in liquid form is of particular importance for soil productivity. Almost half of our plowed area has an inadequate supply of this most important element of plant nutrition. Even in the present relatively small average harvest, the balance of phosphorus in the soil of the RSFSR, Kazakh SSR, and the Ukraine is becoming more and more adverse. Therefore, in noting the particular importance of increasing the supply of mineral fertilizers to farms, we feel that it is essential to emphasize the importance of improving the variety and quality of mineral fertilizers. Plans for delivering phosphorus fertilizers deserve special attention.

At the same time it is necessary to use fertilizers carefully and efficiently. For example, when phosphorus is introduced into the rows during sowing operations, it increases the harvest yield of grain by 2-3 fold as compared with the scattering method of mineral fertilizer introduction. Therefore this must become the rule everywhere. Grain sowing must be conducted only in conjunction with pre-sowing introduction of phosphorus fertilizer. Herein lies a great resource for increasing grain production particularly in the areas of the Northern Caucasus, Volga region, Siberia and Kazakhstan.

In the Nonchernozem Zone on the humus-podzol lands, the introduction of phosphorus fertilizers must compensate for the phosphates removed by the harvest. Calculations indicated that in order to increase the content of phosphorus in the land here, it is necessary to introduce some 70 to 110 kilograms of  $P_2O_5$  per hectare over the amount removed by the harvest of agricultural products.

Chestnut soils and carbon Chernozem lands occupy large areas in the steppe zone. They also are poorly supplied with liquid phosphorus. Consequently, in developing zonal systems here for fertilizing fields, the doses of phosphorus introduced into the soil must be increased. The optimal amount of phosphorus in these lands must be 3-4 milligrams per 100 grams of earth.

The soil of our nation is better supplied with liquid forms of potassium than with phosphorus. Of the total area of cultivated land surveyed, 36 percent had a low and average potassium content. The humus-podzol sandy loam and sandy lands as well as the turf and bog peat areas are particularly poor in their potassium content. Naturally, potassium fertilizers have the greatest effect on them. In order to have high and hardy harvest yields of grain and other crops, on the humus-podzol lands which have a light texture, the optimal content of potassium should be 18-20 milligrams per 100 grams of earth, while on loamy land it should be 23-25 milligrams.

However, it is clear that the consistent introduction of chloride potassium fertilizer has an adverse effect upon the quality of a number of agricultural products. Therefore, it would be fitting to make a special statement in the Basic Goals concerning the necessity to speed up the production of non-chloride potassium fertilizers.

Specialists realize that fertilizers become effective only in the absence of an acid reaction and salinity in the soil. Nevertheless, in our nation, particularly in the Nonchernozem Zone of the RSFSR, millions of hectares of arable land, meadows and pasture land have a high level of acidity. Therefore, liming must be primary

in the measures taken to increase the productivity of these lands. It must precede the application of mineral fertilizers. Moreover, it is important to introduce total doses of lime in order to assure an optimal reaction in the earth which is essential for high harvest yield of all rotated crops.

Unfortunately in the Nonchernozem Zone of the RSFSR, plans for liming acidic soils are not being carried out. This reduces the effectiveness of mineral fertilizers. In connection with this, in the Basic Goals, where the improvement in the quality of liming acidic soils is discussed, it would be advisable to write the following: "Improve the rate and quality of liming acidic soil and make broader use of existing resources of local liming materials for this purpose."

Now it is well known how important it is to increase the productivity of the soil used for pod-bearing crops, and primarily for the perennials. Improving its agro-physical, agro-chemical and biological property, pod-bearing plants are the best predecessors for all crops. For example, on average cultivated land, following pod-bearing predecessors, about 30 quintals of wheat per hectare can be gathered. The additional introduction of 60-90 kilograms of nitrogen per hectare provides for an increase in grain harvest of up to 40-45 quintals. In order to attain the same level of harvest yields for grains which were planted after grasses, the nitrogen fertilizer doses must be increased by a factor of 1.5-2.

In connection with the intensification of farming and the increased utilization of chemical resources, the protection of the environment becomes very important. Because recommendations on fertilizer application were not followed, there were cases where sub-soil waters were mineralized, algae in reservoirs multiplied prematurely, and toxic compounds accumulated in crops. Therefore it is very important to follow exactly the optimal doses of fertilizers introduced and adhere to the correct combination of nitrogen with phosphorus and potassium. They must be skillfully introduced and this will allow undesirable effects to be avoided.

Now our science and advanced experience have the necessary means at their disposal which allow them to ensure an expanded soil productivity and a steady increase in harvest yield, regardless of the weather. This means that the primary task is that these resources and recommendations of the academicians should be correctly and fully utilized in farming. A great deal depends upon the leaders, brigade leaders, kolkhoz and sovkhoz specialists, and mechanical experts. Taking into account specific conditions, they must know how to and be capable of applying fertilizers. They must know proper methods for cultivating the land, for sowing and caring for agricultural crops, and they must skillfully carry out the production processes for raising them.

8714  
CSO: 1824

END

**END OF**

**FICHE**

**DATE FILMED**

4/15/81

---